



**Scientific Proceedings
&
Book of Abstracts**

**39th Annual Conference of
Association of Obstetricians and
Gynaecologists of Delhi
2017**

Conference Theme:
Bridging the Gap:
Taking evidence & innovation to clinical practice

Organised by:
**Department of Obstetrics and Gynecology
UCMS & GTB Hospital, Delhi**



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TEAM THAT CARES

- Dr. Sarveen Ghumman Sindhu (Director & Head)
- Dr. Bheema Banga (Senior Consultant)
- Dr. Tanya Budahee Roketgi (Senior Consultant)
- Dr. Shalini Chawla (Consultant)

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**Scientific Proceedings
&
Book of Abstracts**

**39th Annual Conference of
Association of Obstetricians and
Gynaecologists of Delhi
2017**

Date: 18th & 19th November, 2017
Venue: India Habitat Centre, New Delhi

Conference Theme:
Bridging the Gap:
Taking evidence & innovation to clinical practice

Organised by:
Department of Obstetrics and Gynecology
UCMS & GTB Hospital, Delhi

AOGD SECRETARIAT
Room No 712, 7th Floor, Private Ward, MCH Block
Department of Obstetrics and Gynecology
Guru Teg Bahadur Hospital & University College of Medical Sciences
Dilshad Garden, Delhi-110095, India
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AOGD Conference 2017

Organising Committee

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Dr Shalini Rajaram

Organising Co-Chairperson
Dr Kiran Guleria

Organizing Secretary
Dr Abha Sharma

Jt. Org. Secretaries
Dr Sandhya Jain
Dr Himsweta Srivastava

Scientific Advisors
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Dr Amita Suneja
Dr A G Radhika

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Dr Bindiya Gupta
Dr Sruthi Bhaskaran

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Dr Alpana Singh
Dr Archana Chaudhary

Inauguration
Dr Sandhya Jain
Dr Anshuja Singla
Dr Rashmi Gupta

Hall Co-ordinators
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Dr A G Radhika
Dr Sandhya Jain
Dr Seema Prakash
Dr Bindiya Gupta
Dr Sruthi Bhaskaran
Dr Bhanupriya
Dr Ritu Khatuja

Poster Co-ordinators
Dr Richa Sharma
Dr Sumita Mehta
Dr Anshul Grover

Audio / Visual
Dr Himsweta Srivastava
Dr Richa Agarwal
Dr Vishnu Bhartiya

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Dr Sanjeeta Behera

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Dr Shweta Prasad

Transport Committee
Sruthi Bhaskaran
Archana Chaudhary



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Second Row (L to R): Sruthi Bhaskaran, Bindiya Gupta, Anshuja Singla, Richa Agarwal, Bhanupriya, Anita Gupta, Alpana Singh, Rachna Agarwal, Himsweta Srivastava, Archana Chowdhary

Dr. Jagdish Prasad
M.S. M.Ch., FIACS
Director General of Health Services



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स्वास्थ्य सेवा महानिदेशालय
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10th November, 2017

दिनांक/Dated.....



MESSAGE

I am extremely glad to know that the Department of Obstetrics & Gynaecologist, UCMS & GTB Hospital is organizing the 39th Annual AOGD Conference with the theme **“Bridging the Gap- Taking Evidence and Innovation to Clinical Practice”** from 17th-19th November 2017.

Women in India continue to face various health concerns particularly problems of uncontrolled fertility, infectious diseases, malnutrition, malignancies and various non-communicable diseases amongst the others. The Government strives to improve women's health through various health programmes as women's health has serious repercussions on health and well being of the family and that of society and nation at large. The theme of the conference is highly apt in present day scenario as we need to continually update our knowledge to formulate new policies pertaining to women's health. The conference will be a great boon to the younger generation to update their skills and knowledge for betterment of patient care.

congratulate the organizers for planning this academic event and convey my best wishes for grand success of the conference.

(Dr. Jagdish Prasad)



Dr. SUNIL KUMAR
Director Professor

Medical Director
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Government of NCT of Delhi
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MESSAGE

Dr. SUNIL KUMAR

I am happy to know that the Department of Obstetrics & Gynaecologist, UCMS & GTB Hospital is organizing the 39th Annual AOGD Conference with the theme **“Bridging the Gap- Taking Evidence and Innovation to Clinical Practice** from 17th-19th November 2017.

I am hopeful that the conference will provide a platform to exchange expertise, update knowledge and skills of delegates thereby improving quality of care. An insight into latest advances and developments in envisaged through a carefully crafted scientific programme.

Felicitations to AOGD for its commendable work in research and innovation. I also congratulate the organizers and the participants of the conference and extend my best wishes for its success!

(Dr. Sunil Kumar)



DR. V.P. GUPTA
DIRECTOR PROFESSOR and
PRINCIPAL



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DILSHAD GARDEN, DELHI - 110 095

No.MC/PO/Message/2017

Nov. 11, 2017
Dated: -----

Message

I am immensely delighted to know that Department of Obstetrics & Gynaecologist, UCMS & GTB Hospital is organising the 39th Annual AOGD Conference with the theme “**Bridging the Gap- Taking Evidence and Innovation to Clinical Practice**” from 17th - 19th November 2017.

I profoundly acknowledge the effort organisers have put in and brought experts on a common platform and enlighten the delegates with latest updates in the field.

I congratulate the organisers and also welcome all the delegates on being part of this great academic bonanza. I hope that the deliberations and proceedings of the Conference will definitely help the budding Obstetrics and Gynaecologists to develop in depth clinical insights which will further help to improve the maternal health in the country.

I wish the conference great success.

(V. P. GUPTA)

Message



Dear Friends

It is with immense pleasure and satisfaction that I write this message for the Annual Conference of AOGD. The test that AOGD is a premier organisation is exemplified with the overwhelming response to its 39th Annual Conference. At the time of writing this message the number of registrations has exceeded 500!

The year that has seen AOGD spreading its wings and successfully launching several new initiatives. We began with the mission and theme **'Optimizing Women's Health through Enhanced Skills and Best Practices'** and have since conducted several **'Skill workshops'** to enhance learning of our young members. We have also partnered with various organisations and forums in Delhi and Nationally for CME's and conferences. 'BOH-A Trilogy' along with FOGSI and partnering with DGES for its annual conference were both hugely successful with delegates and faculty from around the country. The response to the monthly **'Theme Based Bulletins'** has far exceeded our expectations and raised the bar so high that future Editorial teams will have to start thinking and strategizing right away! Most **'Monthly Clinical Meetings'** were full house with meaningful presentations and discussions.

The Annual academic bonanza is an event everyone waits for not only for academics but also to network with professionals on a common platform. The scientific program this year is robust and well thought of with experts in respective fields chosen to discuss, deliberate and deliver updates and best practices. I'm sure ample justice will be done to the theme of the Conference **'Bridging the Gap: Taking Evidence & Innovation to Clinical Practice'**. The organising team has worked very hard to make it worthwhile. Hope you enjoy all three days.

The much cherished **'AOGD Good Practice Guidelines'** have been compiled into a handy book – much to the efforts various Chairpersons and members of AOGD Sub-Committees. I thank all of them sincerely for initiating the process and together with rounds of meetings and discussions the guidelines have become a reality.

Finally AOGD 2017-18 has for the first time has instituted **'Lifetime Achievement Awards'** to be conferred on Dr SN Mukherjee and Dr Urmil Sharma for their lifelong contribution to AOGD and the field of Obstetrics & Gynaecology. I thank all our patrons, advisors, EC members, AOGD subcommittee Chairpersons & members, AOGD members and finally team UCMS & GTBH for their wholehearted support in taking AOGD to greater heights. Lastly all faculty who have put in a great deal of effort and delegates need full praise for making this conference a success.

Cheers!

Shalini Rajaram

President, AOGD 2017-18

Message



Dear friends,

It's finally here... the most awaited annual event of our Association "The Annual AOGD Conference – 2017."

Our organizing team has worked day and night to put together a brilliant scientific programme, a bonanza of star speakers, budding professionals and young researchers; all moving towards one goal – "promoting women's health and enhancing professional skills."

I request one and all to join us in this annual festival of learning and fun and make this a memorable event. So "no stopping" as Ayn Rand says "The Question isn't who's going to let me; it's who's going to stop me"

See you in the conference!

Warm Regards,

Dr Kiran Guleria
Vice President AOGD 2017-18

Message



Dear Delegates

Welcome to 39th annual conference of AOGD!!

In this age of knowledge explosion it has become imperative to keep abreast with latest developments and newer techniques in the field of medicine. Also the “Google” informed patients have made it mandatory for doctors to feel confident in their choice of treatment. Keeping this in mind, we planned this conference with the theme of “**Bridging the Gap-Taking Evidence and Innovation to Clinical Practice**”. The format of the conference will provide ample scope for lively interaction of obstetricians and gynaecologists. The face to face discussion based on evidence will provide an excellent opportunity to clear all doubts and reach a consensus take home message.

The highlight of the conference is the Orations by leading experts in various fields of Gynae and Obs like Dr. Mario Leitao, Director, Minimal Access and Robotic Surgery (MARS), Memorial Sloan-Kettering Cancer Center, New York, Dr Alka Kriplani HOD AIIMS, Dr P Raghuram President Breast Surgeon’s association of India and Dr Sudha Prasad Past President AOGD. We are sure you will find this conference extremely informative and valuable to upgrade your expertise.

It gives me great pleasure to present **Scientific Proceedings cum Abstract book** of 39th annual conference of AOGD. It has been a herculean task accomplished by our abstract committee. I hope you will benefit from abridged versions of speakers’ presentations.

I take this opportunity to convey my most sincere thanks to all the esteemed members of the faculty and organizing committee who have devoted their precious time and efforts to make this conference successful.

Last but not the least, our special thanks to Mr. Rakesh Ahuja and his team at “Process and Spot” publications who have made sincere efforts to prepare this souvenir and book of abstracts. We hope you would enjoy reading it and cherish it as a memento of our annual conference

With best wishes and regards

Dr Abha Sharma
Secretary, AOGD 2017-18

Message From the Editors' Desk

Dear Friends !

Greetings from the Editorial Team as we welcome you all to the scientific feast of 39th Annual Conference of AOGD. This is our proud privilege and a great responsibility to take out this book of Conference Proceedings and Abstracts for all AOGD members.

“Reading maketh a full man;
Conference a **ready** man; And
Writing an **exact** man”

We are thankful to Dr Shalini Rajaram, our dynamic AOGD president, and Dr Abha Sharma, Hon. AOGD secretary for entrusting us with this huge responsibility, encouraging us and helping out with their wise inputs. Taking out this manuscript has been an exciting journey with learning along the way. Annual Conference of AOGD is an event that every member looks forward to.....To learn, to interact, to socialize and in the end, to come back with some knowledge gained, some doubts cleared and ultimately a change in clinical practice. This conference aims to do so with the very thoughtful and meaningful theme of **“Bridging the Gap- Taking Evidence and Innovation to Clinical Practice”**. With the well chosen guest lectures by experts in their fields, covering variety of important areas in Obstetrics & Gynecology, this scientific event is going to be an enriching experience for everyone. But, in the end, listening has its limitations due to easy distraction and no way to rewind. In contrast Reading allows individuals to read and understand at their own speed with better understanding and retention. This is where our role comes, to bring out this Scientific Book allowing everyone to carry home the knowledge shared by the eminent speakers. We thank our guest speakers for taking out their time and sending their write ups in time for us to be able to do so. This Souvenir book is prepared by compiling the scientific proceedings of the conference and the research work of young and budding gynecologists.

We are overwhelmed by the exciting response of young members to participate, present and share their studies and clinical experiences in the Free communication section. Compiling and editing the abstracts has been an experience in itself.

Along with this Souvenir book, we are taking out a book on **“AOGD Good Practice Guidelines”** prepared by the various AOGD sub committees. The guidelines have been written very well after lot of efforts and discussions by various Sub Committees. This is a new initiative meeting the long standing need of everyone in the times of Evidence based practices with new research changing scenarios so fast, and the challenges of medico legal controversies. We are sure that Guidelines book is worth the efforts and will be helpful for every AOGD Member.

In the end, we would like to thank Mr Rakesh Ahuja and his entire team at Process and Spot, who have worked tirelessly with us, in bringing out this Books of Conference Proceeding & Abstracts, and the Good Practice Guidelines book in the record time. Without their efforts, this would have been impossible.

Happy reading to all of you!!!! Hope you enjoy this Scientific feast.

“A Book is a Gift you can open again and again”



Dr Sruthi Bhaskaran, Dr Bindiya Gupta, Dr Rashmi

AOGD Editorial Team

39th Annual Conference of AOGD 2017

Bridging the Gap - Taking Evidence and Innovation to Clinical Practice

Scientific Programme

Day 1: Saturday, 18th November 2017

07:30am onwards				Registration			
		Stein Auditorium Hall A				Silver Oak Hall B	
Session 1		Understanding Preeclampsia				Resurrection of the Contraceptive Basket	
09:00am - 10:00am		Chairpersons: Dr Sudha Salhan, Dr Poonam Yadav, Dr Achla Batra, Dr Mamta Gupta				Chairpersons: Dr Puneeta Mahajan, Dr Renu Arora, Dr Dolly Chawla, Dr Arifa Anwar	
		Predictors of Preeclampsia : From Bench to Bedside	Dr Soma Mukherjee	Antara and Chaya: New additions to the Contraceptive Basket		Dr Jyoti Sachdeva	
		Late Onset Preeclampsia: Is the pathogenesis different?	Dr Anupama Bahadur	Emergency Contraception: Expanding Indications		Dr Sushma Sinha	
		Management of Acute Onset Severe Pre-eclampsia	Dr Devender Kumar	Progesterone Vaginal Ring and Sino Implant II		Dr Smiti Nanda	
		Drug Therapy for Control of Hypertension in Pregnancy: An Update	Dr Jyotsna Suri	Menstrual Moksha		Dr Aruna Nigam	
		Discussion		Discussion			
10:00am - 10:30am				Tea & Exhibition			
Session 2		AOGD President's Oration					
10:30am - 11:00am		Chairpersons: Dr S N Mukherjee, Dr Kamal Buckshee, Dr Neera Aggarwal, Dr Gita Radhakrishnan					
		Unfurling the Facts of Assisted Reproduction: Dr Sudha Prasad , President AOGD, 2016-17					
Session 3		Plenary Session					
11:00am - 11:40am		Chairpersons: Dr Shakti Bhan Khanna, Dr Suneeta Mittal, Dr Amita Suneja, Dr Sunita Malik					
		Key Note Address: ABC of Breast Health: What to do and What not to! Dr P Raghuram , President, Association of Breast Surgeons of India					
		Expert Opinion: Prioritizing Surgical Safety and Minimising Surgical Infections: Dr Shalini Rajaram , President AOGD, 2017-18					
		Stein Auditorium Hall A				Silver Oak Hall B	
Session 4		Panel Discussion: Current Controversy				Symposium: Expert's Speak	
		Moderators: Dr Gouri Devi, Dr Manju Puri				Chairpersons: Dr Sohani Verma, Dr Renuka Sinha, Dr Anuradha Kapur, Dr Rita Bakshi	
11:40am - 12:40pm		Panel Discussion: Addressing and Rationalising Rising Cesarean Section Rates				ART: The Way Forward	Dr Kamini Rao
		Panelists: Dr Reva Tripathi, Dr Pratima Mittal, Dr Anjali Tempe, Dr Kanwal Gujral, Dr Manju Khemani, Dr Raghuram Malliah, Dr Rinku Sen Gupta				Laparoscopic Findings in Female Genital Tuberculosis: New Signs	Dr J B Sharma
						Non Pharmacological Management of Osteoporosis	Dr Maninder Ahuja
						Ethical Issues / Unethical Acts / Professional Misconduct	Dr Ashwini Setya
12:40pm - 01:15pm				Stein Auditorium Hall A			
				Inauguration & Role Play: Violence against Doctors			
01:15pm - 02:00pm				Lunch & Poster Viewing			
		Stein Auditorium Hall A				Silver Oak Hall B	
Session 5		Genetic Tests in Clinical Practice					
02:00pm - 02:45pm		Changing Practice & Prenatal Diagnosis: Case Scenarios: Moderator: Dr Ratna Puri				Hereditary Breast & Gynecological Cancers: Case Studies Moderator: Dr Amita Maheshwari	
		Panelists: Dr Soma Mukherjee, Dr Sunita Bijarnia, Dr Kuldeep Singh, Dr Sunita Verma, Dr Seema Thakur, Dr Reema Kumar Bhatt				Panelists: Dr Rashmi Bagga, Dr Amit Verma, Dr Satinder Kaur, Dr Shruti Bhatia, Dr Pankaj Talwar, Dr Nitish Rohatgi, Dr Geeta Kadayaprath	
Session 6		Stein Auditorium Hall A				Silver Oak Hall B	
02:45pm - 04:00pm		High Risk Obstetrics: Time to up the ante!				Infertility: Technical Update	
		Chairpersons: Dr SS Trivedi, Dr Chitra Raghunandan, Dr Jyoti Bhaskar, Dr Jayasree Sundar				Chairpersons: Dr Gita Radhakrishnan, Dr Anjali Tempe, Dr K D Nayar, Dr Sushma Sinha (Apollo)	
		Delivery of Obstetric Critical care: Where and How to begin	Dr Pratima Mittal	Maximising Successful Implantation: Advances in endometrial receptivity		Dr Kamini Rao	
		Pregnancy after Bariatric Surgery	Dr K Sasikala	Luteal Support: What, when and for how long?		Dr Vanita Suri	
		Jaundice in Pregnancy: Minimising morbidity & mortality	Dr Ashok Kumar	Pre-implantation Genetic Screening: Should the practice continue?		Dr Kuldeep Jain	
		An Approach to a Case with Oligoamnios	Dr Vandana Chadha	Biomarkers for Ovarian Reserve: What is best?		Dr Sonia Malik	
		Unexplained Recurrent Pregnancy Loss	Dr Sangeeta Gupta (MAMC)	Ovarian Aging: Can it be stopped?		Dr Surveen Ghumman	
		Discussion		Discussion			

Session 7	Stein Auditorium Hall A	Silver Oak Hall B		
04:00pm - 05:15pm	Video Session: Obstetrics	Video Session: Gynecology		
	Chairpersons: Dr Sangeeta Gupta (ESI), Dr Veena Bhatt, Dr Anjila Aneja, Mamta Dagar	Chairpersons: Dr Harsha Khullar, Dr Manju Hotchandani, Dr Madhavi M Gupta, Dr Kalpana		
	Retrograde Hysterectomy for Placenta Praevia/accreta	Dr Abha Sharma	Endoscopic Sentinel Node Dissection	Dr Mario M. Leitao Jr
	Laser Ablation in TTTS	Dr Chanchal Singh	Le Fort's procedure: Simplicity personified!	Dr Sandhya Jain
	First Trimester Anomaly Scan is not just NT/NB!	Dr Krishna Gopal	Mini Sling for SUI	Dr Amita Jain
	Obstetric Color Doppler	Dr Kuldeep Singh	Clitoroplasty	Dr Dhirender Suman
	Laparoscopic Encerclage	Dr B B Dash	Specimen Retrieval Techniques in Laparoscopy	Dr Dinesh Kansal
Step Wise Devascularisation of Uterus & Internal Iliac Artery Ligation made Easy	Dr Sumita Mehta	Laparoscopic Myomectomy	Dr Ashima Taneja	
Innovation in PPH Management: Bakri & Chhattisgarh Balloon	Dr Alpana Singh	Robotic Management of Deep Endometriosis	Dr Sarika Gupta	
05:15pm	Tea & Exhibition			

HALL C					
Hall Co-ordinators: Dr Anshuja Singla, Dr Ritu Khatuja					
Free Communications FC-1	Free Communications FC-2	Lunch & Poster Viewing	Free Communications FC-3	Free Communications FC-4	Quiz Theory
08:00am - 09:00am	09:00am - 10:00am	01:00pm - 02:00pm	02:00pm - 03:00pm	03:00pm - 04:00pm	04:00pm - 05:00pm
Improving Surgical Techniques: Old & New	High Dependency Obstetrics		Miscellaneous	Gynecological Emergencies	Emergency Obstetrics
Chairpersons: Dr YM Mala, Dr Ashima Taneja, Dr Jyoti Meena	Chairpersons: Dr Rashmi Bagga, Dr Renu Misra, Dr Ratna Biswas		Chairpersons: Dr Rashmi, Dr Sangeeta Gupta (MAMC), Dr Anita Gupta	Chairpersons: Dr Veena Ganju, Dr Richa Sharma, Dr Anupama Bahadur	Quiz Masters: Dr Rachna Agarwal, Dr Rashmi Malik
FC1.1 Dr Samar Mukhtar	FC2.1 Dr Saloni Kamboj		FC3.1 Dr Neha Sharma	FC4.1 Dr Kriti Tiwari	
FC1.2 Dr Shubhadeep Bhattacharjee	FC2.2 Dr Preeti Sharma		FC3.2 Dr Neelam Kumari	FC4.2 Dr Shristi Shrivastava	
FC1.3 Dr Sushma Sinha	FC2.3 Dr Shehla Jamal		FC3.3 Dr Anupriya Narain	FC4.3 Dr Rashmi Shriya	
FC1.4 Dr Anurag Vashista	FC2.4 Dr Shivani Goyal		FC3.4 Dr Soniya Dhiman	FC4.4 Dr Lalita Verma	
FC1.5 Dr Swati Kashyap	FC2.5 Dr Chandrakanta Prasad		FC3.5 Dr Sonali Jain	FC4.5 Dr Kanika Modi	
FC1.6 Dr Lavi Sindhu	FC2.6 Dr Mini Kadian		FC3.6 Dr Jalagadugula Chandini	FC4.6 Dr Tradeep Saluja	
FC1.7 Dr Sonia Chawla					

E - Posters Display: Silver Oak Foyer 09:00am - 05:00pm			
Poster Co-ordinators: Dr Anshul Grover, Dr Alpana Singh			
Chairpersons: Dr K Sasikala, Dr K K Roy, Dr Sumita Mehta, Dr Pikee Saxena			
Poster Presentation: 01:00pm - 02:00pm			
P-1 (Screen - 1)	P-2 (Screen - 2)	P-3 (Screen - 3)	P-4 (Screen - 4)
Dr Sonal Prasad	Dr Parul Sharma	Dr Ankita Mago	Dr Suvigya Gupta
Dr Vaishnavi Seshan	Dr Sumedha Gupta	Dr Isha Mahajan	Dr Tanuja Bora
Dr Ankita Srivastava	Dr Archana Shakywal	Dr Aastha Raheja	Dr Gazala Shahnaz
Dr Sonam Singh	Dr Monika Sahoo	Dr Archana	Dr Aprajita Kumari
Dr Sanjana Wadhwa	Dr Simar Kaur	Dr Ankita Sethi	Dr Nivedita Bharti
Dr Anju Singh	Dr Manu Priya	Dr Samina Ashraf	Dr Plabani Sarkar
Dr Charu Taneja	Dr Sumitra Bachani	Dr Shinjini Narang	Dr Bhawna Dawra
Dr Manisha V Ramani	Dr Purnima Saxena Wattal	Dr Prashant Patil	Dr Tuhina Goel
Dr Harshiba Kaur	Dr Supriya Gupta	Dr Supriya Goyal	Dr Bharti Singh
Dr Shriya Attri	Dr Ankita Singh	Dr Aparna Setia	Dr Isha Nim
Dr Sheena Sobti	Dr Geetanjali Gupta	Dr Seema Prakash	
Dr Taruna Sharma	Dr Tarang Preet Kaur		
Dr Sandhya Deora			

Day 2: Sunday, 19th November 2017

07:30am onwards		Registration	
Stein Auditorium Hall A		Silver Oak Hall B	
Session 8	Fetal Medicine: Managing the Unborn	Rational Use of Hormones: Which, when, how much and how long?	
9:00am - 10:00 am	Chairpersons: Dr Geeta Chadha, Dr Anita Sabharwal, Dr Ila Gupta, Dr Nivedita Sarda	Chairpersons: Dr Geeta Kinra, Dr Sanjivini Khanna, Dr Lalita Badhwar, Dr Indu Chawla	
	Rh Isoimmunisation/Fetal Anemia: When to refer, what to do?	Threatened Miscarriage	Dr Nutan Agarwal
	Options beyond Laser in Complicated Twin Pregnancy	Adolescent Endometriosis	Dr Renu Misra
	Growth problems, Monitoring and Timing Delivery in Multiples	Ovarian Insufficiency	Dr Ranjana Sharma
	Ultrasound in Delivery decisions	Menopausal HT	Dr Neerja Goel
	Discussion	Discussion	
10:00am - 10:30am		Tea & Exhibition	
Session 9	Stein Auditorium: Brigadier Khanna Oration		
10:30am - 11:00am	Chairpersons: Dr Indrani Ganguli, Dr Swaraj Batra, Dr Aruna Batra, Dr Neerja Bhatla		
	Management of Endometrial Cancer: MSKCC Practice Dr Mario M. Leitao Jr., Director, Robotic Surgery, Memorial Sloan Kettering Hospital, New York		
Session 10	Plenary Session		
11:00am - 11:20am	Chairpersons: Dr Urmil Sharma, Dr Maya Sood, Dr Malvika Sabharwal, Dr Nirmala Agarwal		
	Key Note Address: Abnormal Uterine Bleeding: Evidence Based Practice: Dr Alka Kriplani (Past President FOGSI)		
Session 11	Sponsored Session-GSK	Sponsored Session -MEDGENOME	
11:20am-11:50am	Vaccination for Women	Chairpersons: Dr Kanwal Gujral, Dr Surveen Ghumman, Dr Rita Bakshi	
	Chairpersons: Dr S N Basu, Dr Shalini Rajaram, Dr Kanika Gupta	NIPT in Prenatal Screening & Advantage	Dr Priya Kadam
	Maternal Vaccination for Pertussis prevention (Tdap)	Introduction to prenatal and perinatal birth psychology	Dr Nikita Sobti
	Vaccination for Adolescent Girls and Young Women (HPV, MMR & Varicella)		
Session 12	Stein Auditorium Hall A	Silver Oak Hall B	
11:50am - 12:30pm	Contemporary Practice	Smart Science	
	Chairpersons: Dr Shashi Prateek, Dr Rupam Arora, Dr Shakuntla Kumar, Dr Archana Verma	Chairpersons: Dr Uma Rai, Dr Susheela Gupta, Dr Jyoti Agarwal, Dr Yuvakshi Juneja	
	Atosiban/Magnesium Sulfate in Preterm Labor	Dilemmas in Management of Ectopic Pregnancy	Dr Bhaskar Pal (VP FOGSI East Zone)
	TOLAC: Experience and Practice points	Non Technical Skills: Medicolegal importance for doctors	Dr Chitra Setya
	Fetomaternal Risks and Monitoring in GDM	HPV Biomarker Triage in Current Screening Paradigms	Dr Pakhee Aggarwal
	Discussion	Discussion	
Session 13	Competition Paper : Research Presentations	Panel Discussion: Gynae Oncology	
	Chairperson: Dr Kiran Guleria, Dr A G Radhika		
12:30pm - 01:15pm	Competition Paper 1	Dr Deepika Negi	Minimally Invasive Surgery in Gynecologic Malignancy: Safe and Best Practice
	Competition Paper 2	Dr Divya Arora	Moderator: Dr T S Shyla Sree
	Competition Paper 3	Dr Faridi F	Panelists: Dr Mario M. Leitao Jr., Dr UP Jha, Dr Sabhyata Gupta, Dr Nikita Trehan, Dr Puneeta Bhardwaj, Dr Kanika Gupta
	Competition Paper 4	Dr Singhania M	
01:15pm -02:00 pm			Oncology Update
			Chairpersons: Dr Gauri Gandhi, Dr Raksha Arora, Dr Vijay Zutshi, Dr Swasti
		FIGO Smart Phone Application for Management of Gynecological Cancers	Dr Neerja Bhatla
	Competition Paper 5	Borderline Ovarian Tumors: A Dilemma	Dr Rupinder Sekhon
	Competition Paper 6	Lymphadenectomy in Ovarian Cancer: LION Trial	Dr Neha Kumar
	Competition Paper 7	Approach to a case with Vulval Lesion	Dr Saritha Shamsundar
	Competition Paper 8	Discussion	
02.00pm - 02:30pm	Lunch & Poster Viewing (Hall C)		

	Stein Auditorium Hall A			Silver Oak Hall B		
Session 14	Best of 2017: Evidence Based Practice in Obstetrics			Best of 2017: Evidence Based Practice in Gynaecology		
02:30pm - 03:45pm	Chairpersons: Dr Raka Guleria, Dr Anita Rajoria, Dr Birbala Rai, Dr Banashree Das			Chairpersons: Dr Alka Gujral, Dr Raj Bokaria, Dr Anita Rajurkar, Dr Arbinder Dang		
		Speaker	Discussants		Speaker	Discussants
	Exercise Training and Weight Gain in Obese Pregnant Women	Dr Mala Srivastava	Dr Reena Yadav, Dr Renu Tanwar	Uterine Artery Embolization vs. Hysterectomy in the Treatment of Symptomatic Uterine Fibroids	Dr Richa Sharma	Dr Chandra Mansukhani, Dr Ratna Biswas
	Thyroid Disorders in Pregnancy: 2017 Guidelines	Dr Deepti Goswami	Dr SV Madhu, Dr Himshweta Srivastava	Treatment Strategies for WHO Type II Anovulation: Systematic review and metaanalysis	Dr Tanya Buckshee	Dr Pankaj Talwar, Dr Rashmi Sharma
	Preterm birth prevention in Singleton & Twin Pregnancy	Dr Reeta Mahey	Dr Kiran Guleria, Dr Asmita Rathore	Risk Reducing Salpingectomy/Salpingo-Oophorectomy: Current Guidelines	Dr Bindiya Gupta	Dr Amita Suneja, Dr Urvashi Miglani
	Elective Delivery versus Expectant Management for Pre-eclampsia: Meta analysis of RCT's	Dr Kavita Agarwal	Dr Kiran Agarwal, Dr Deepti Choudhary	Morcellation in Fibroids: Risks and Current Practice	Dr Shivani Sabharwal	Dr K K Roy, Dr Neema Sharma
	Antiretroviral Therapy in Pregnancy: An Update	Dr Rekha Bharti	Dr AG Radhika, Dr YM Mala	Selective Progesterone Receptor Modulator: Latest recommendations	Dr Vidhushi Kulshrestha	Dr Gita Radhakrishnan, Dr Nympha Walecha
Session 15	Razor Sharp Debates			Confronting Controversies		
03:45pm - 04:45pm	Chairpersons: Dr Geeta Mehdiratta, Dr Ramandeep Kaur, Dr Madhu Ahuja, Dr Poonam Lau			Chairpersons: Dr Rita Ranjan, Dr Vandana Gupta, Dr Taru Gupta, Dr Shashi Kabra		
		For	Against		Speaker	
	Cesarean on Demand is the Right of a Pregnant Mother	Dr Rashmi Mallik	Dr Aparna Sharma	Management of Adenomyosis in Women under 35	Dr Leena Wadhwa	
	Soil and Seed are Ripe for Uterine Transplantation in India	Dr Monika Gupta	Dr Seema Singhal	IVF vs Reversal of Sterilisation after Tubal Ligation	Dr Jyoti Bali	
	All Fibroids seen during Cesarean Section must be Removed	Dr Garima Kachawa	Dr Sweta Balani	Hydrosalpinx: Tubal Surgery or in Vitro Fertilisation: An everlasting Dilemma	Dr Nitasha Gupta	
	Egg Freezing before 30: Sure shot way of achieving future pregnancy	Dr Sunita Arora	Dr Ritu Jain	Vaginal versus Laparoscopic Hysterectomy: The better route!	Dr Shelly Agarwal	
04:45pm - 05:15pm	GBM & Valedictory					
05:15pm onwards	Tea & Exhibition					
HALL C						
Hall Co-ordinators: Dr Anshuja Singla, Dr Ritu Khatuja						
Free Communications FC-5	Free Communications FC-6		Lunch & Poster Viewing		Quiz Finals	
08:00am - 09:00am	09:00am - 10:00am		01:00pm - 02:00pm		02:00pm - 03:00pm	
Rational Use of Hormones in Obstetrics & Gynecology	Miscellaneous				Emergency Obstetrics	
Chairpersons: Dr JB Sharma, Dr Jyotsna Suri, Dr Rachna Agarwal	Chairpersons: Dr Poonam Yadav, Dr Rupali Dewan, Dr Sharda Patra				Quiz Masters: Dr Rachna Agarwal, Dr Rashmi Malik	
FC5.1 Dr Bhavana Girish	FC6.1 Dr Sparsha					
FC5.2 Dr Nidhi Jain	FC6.1 Dr Ankita Pal					
FC5.3 Dr Shipra Gupta	FC6.1 Dr Neetu Choudhary					
FC5.4 Dr Shalu Jain	FC6.1 Dr Sarita Kumari					
FC5.5 Dr Bhawna Gupta	FC6.1 Dr Deepali Mittal					
FC5.6 Dr Srishti Priyadarshini	FC6.1 Dr K Aparna Sharma					
E - Posters Display: Silver Oak Foyer 09:00am - 05:00pm						
Poster Co-ordinators: Dr Anshul Grover, Dr Richa Sharma						
Chairpersons: Dr Bhaskar Pal, Dr Nidhi Khera, Dr Vatsla Dadhwal, Dr Alpana Singh						
Poster Presentation: 01:00pm - 02:00pm						
P-5 (Screen - 1)	P-6 (Screen - 2)		P-7 (Screen - 3)		P-8 (Screen - 4)	
Dr Jahnavi Varshney	Dr Sadhana Meena		Dr Sonia Goswami		Dr Anita Kumar	
Dr Sheetal Sharma	Dr Kanika Gupta		Dr Priyanka Arora		Dr Urvashi Chhikara	
Dr Rini Pachori	Dr Priyanka Bakolia		Dr Srishti Chaturvedi		Dr Avani Goyal	
Dr Anshul	Dr Saraswati Verma		Dr Neda Mumtaz		Dr Swati Kumari	
Dr Ankita Mann	Dr Arbinder Dang		Dr Roopal		Dr Mily Pandey	
Dr Richa Sharma	Dr Veronica Arora		Dr Kirti Singhla		Dr Swati Rai	
Dr Alpana Singh	Dr Abhilasha Tomar		Dr Farhat Mazhari		Dr Ruchi Verma	
Dr Maansi Jain	Dr Varsha Agarwal		Dr Sonam Singh		Dr Mayuri Ahuja	
Dr Mradulika Sharma	Dr Prabha Verma		Dr Namita Jain		Dr Rashmi	
Dr Nidhi Gupta	Dr Megha Gupta		Dr Shruti Bhaskaran		Dr Vidushi Kulshrestha	
Dr Ruchi Gupta	Dr Arpita Dey				Dr Prerna Singh	
Dr Shweta Mittal	Dr Vandana Mohan					
	Dr Neha Varun					

Pre Conference Workshops Programme

Evidence Based Fetal Care: Screening Protocols

Date: 17th November 2017

Organized by Department of Obstetrics and Gynecology, AIIMS

Venue: Room 3084, Seminar Room, 3rd Floor, Deptt of Obs & Gynae, AIIMS, New Delhi

Organizing Chairperson: Dr Vatsla Dadhwal

Organizing Secretary: Dr K Aparna Sharma

08:30 am - 09:00 am	Registration		
09:00 am - 09:05 am	Introduction to Workshop and Workshop Objectives		Prof Vatsla Dadhwal
09:05 am - 10:40 am	First Trimester Screening	Speaker	Chairperson
09:05 am - 09:20 am	Overview of combined screening	Dr Chanchal Singh	
09:20 am - 09:50 am	Case Discussions : combined screening Low Risk Intermediate Risk High Risk	Dr Poonam Tara Dr Reema Bhatt Dr Manisha Kumar	
09:50 am - 10:05 am	First trimester screening for preeclampsia: Using the algorithm	Dr Anita Kaul	DrAlkaKriplani Dr Kiran Guleria DrRenu Arora
10:05 am - 10:15 am	Raised NT: Looking beyond aneuploidy	Dr Vandana Chadda	
10:15 am - 10:30 am	Screening Fetal Echocardiography	Dr Krishna Gopal	
10:30 am - 10:40 am	Discussion		
10:40 am - 11:00 am	Tea		
11:00 am - 11:40 am	Second trimester screening		
11:05 am - 11:25 am	Role of second trimester screening and genetic soft markers in today's era	Dr K Aparna Sharma	
11:25 am - 11:55 am	Case Discussions: second trimester screening Risk calculations No Markers One or two Markers	Dr Nutan Agarwal Dr Rachna Gupta Dr NanditaDimri	
12:00 am - 12:25 pm	Screening for common genetic conditions		
12:00 am - 12:10 pm 12:10 pm - 12:25 pm	What is feasible and done in India Case discussions	Dr Seema Thakur Dr Sangeeta	
12:25 pm - 01:00 pm	Newer tests in genetics : When to use them?		Dr Madhulika Kabra Dr Asmitha Rathore
12:25 pm - 12:40 pm 12:40 pm - 13:00 pm	Genetic tests: new kids on the block Case Studies NIPT Microarray and NGS	Dr RatnaPuri Dr Ratna Puri Dr Neerja	
13:00 pm - 13:20 pm	Invasive PND procedures: When and How? Common Clinical Scenarios	Dr Vatsla Dadhwal	Dr Nutan Agarwal Dr Sangeeta
13: 20 pm - 14:00 pm	Lunch		
14:00 pm - 15:30 pm	Live Demo of Invasive procedures	AIIMS team	
15:30 pm - 16:45 pm	Hands –On practice on models	Dr Vatsla/Dr Nutan/Dr Aparna /Dr Chanchal	
16:45 pm - 17:00 pm	Discussion		

Hands on Laparoscopy & Hysteroscopy Workshop

Venue: Apollo Spectra Hospital, Karol Bagh, New Delhi

Organizing Chairperson: Dr Malvika Sabharwal

Organizing Secretary: Dr Shivani Sabharwal

09.00 am - 09.30 am	Registration & Introduction
09.30 am - 10.00 am	Laprosopic Pelvic Anatomy
10:00 am - 10:30 am	Tips and Tricks of Endo Suturing
10.30 am - 12.30 pm	Instruments & Endotrainers (hands on training on hystero and laparo trainer)
12.30 pm - 01.30 pm	O.T Live Surgeries
01.30 pm - 02.30 pm	Panel Discussion -Complications and Management in laparoscopy
02.30 pm - 05.00 pm	O.T -Live Surgeries

Pre Congress Infertility Workshop

17th November 2017

Venue: Sitaram Bhartia Institute of Science and Research
B16, Qutab Institutional Area, New Delhi 110016

Chairperson: Dr Renu Misra

Organizing secretary: Dr Priti A Dhamija

Time	Session	Speaker	Chairpersons
08:30 am - 09:15 am	Registration		
09:15 am - 09:30 am	Lamplighting		
	SessionI EVALUATION OF INFERTILE COUPLE: PRACTICAL TIPS		
09:30 am - 09:50 am	Role of ovarian reserve testing: what a non-ivf specialist needs to know	Dr M Gouri Devi	Dr VL Bhargava
09:50 am - 10:10 am	Abnormal Semen Analysis- Place of medical treatment	Dr Pankaj Talwar	Dr Achala Batra
10:10 am - 10:30 am	Tubal patency test; HSG or SIS?	Dr Anita Sabherwal	Dr Rinku Sengupta
10:30 am - 10:50 am	When and whom should we test for Koch's?	Dr Abha Majumdar	
10:50 am - 11:00 am	TEA		
	SessionII CHALLENGES IN INFERTILITY		
11:00 am - 11:20 am	PCO patient: how do we make her ovulate?	Dr Manju Khemani	Dr Raj Bokaria
11:20 am - 11:40 am	Fibroids and Endometriosis; when to operate?	Dr Renu Misra	Dr Nirmala Agarwal
11:40 am - 12:00 am	Reproductive tract anomalies: how to optimize future fertility?	Dr Gita Radhakrishnan	Dr Madhavi Gupta
12:00 am - 12:45 pm	Session III Panel Discussion: Ovulation induction and its hurdles		
	Moderators Dr Sonia Malik Dr Vandana Bhatia	Panelists Dr Shweta Mittal, Dr Leena Wadhwa Dr Pikee Saxena, Dr Nympeha Walecha Dr Nidhi Agarwal	
	Session IVIVF Referral		
12:45 pm - 13:05 pm	When and whom to refer?	Dr Priti A Dhamija	Dr Chitra R
13:05 pm - 13:25 pm	Role of ovum donation and surrogacy	Dr Kaberi Banerjee	Dr Anjali Tempe
13:25 pm - 13:45 pm	Overcoming male factor – ART is the way	Dr KD Nayar	Dr Madhu goel
13:45 pm - 14:15 pm	LUNCH		

	Session V Panel Discussion: Optimizing success rates in IUI		
14:15 pm - 15:00 pm	Moderator Dr Neena Malhotra	Panelists Dr Ritu Jain, Dr Swati Sinha, Dr Reeta Mahey Dr Shalini Chawla Khanna, Dr Puneet Kochhar	
	Session VI IUI-2		
15:00 pm - 15:20 pm	ICMR guidelines for semen banking and donor IUI	Dr Kuldeep Jain	Dr Pratima Mittal
15:20 pm - 15:35 pm	Sperm function tests	Infertech	Dr Rakhi Singh
15:35 pm - 16:00 pm	DEMONSTRATION OF IUI	Infertech	
16:00 pm - 17:00 pm	HANDS ON IUI		

Intrapartum Skills Workshop

Date: 17th November 2017

Organised by Department of Obstetrics & Gynaecology, LHM & SSK Hospital, New Delhi

Time: 8am-4pm

Venue: ME Hall, SJ Auditorium, LHM

Chairperson: Dr Abha Singh

Organizing Secretary: Dr Sharda Patra

Time	Topic	Speaker	Chairpersons
09.00 am - 10.15 am	Session 1: Management of labor- Evidence based practices		
09.00 am - 09.15 am	Plotting and interpretation of Partogram	Dr Beenu Khushwah	Dr Anjali Tempe
09.15 am - 09.30 am	Intra partum CTG interpretation	Dr Karishma Thariani	Dr ReenaYadav
09.30 am - 10.00 am	Second stage labor-How Long is too long	Dr Niharika Dhiman	Dr Pikee Saxena
10.00 am - 10.15 am	Active management of third stage of labor	Dr Shilpi Nain	Dr Prabha lal
10:15 am - 10.45 am	Inauguration & Tea Break		
10.45 am - 11.45 am	Session2 : Assisted Delivery skills- A must know for all (Videos)		
10.45 am - 11.00 am	Assisted Breech Delivery	Dr Swati Agrawal	Dr Manju Puri
11.00 am - 11.30 am	Instrumental vaginal delivery-Forceps	Dr Muntaha Khan	Dr Abha sharma
11.30 am - 11.45 am	Instrumental vaginal delivery- Ventouse	Dr Nishtha Jaiswal	Dr Kiran Aggarwal
11.45 am - 01.00 pm	Session 3 : Intrapartum emergencies- Practice pearls (with Videos)		
11.45 am - 12.00 am	PPH Drill	Dr Meenakshi	Dr SS Trivedi
12.00 pm - 12.15 pm	Eclampsia Drill	Dr Deepika Meena	Dr Chitra R
12.15 pm - 12.30 pm	Shoulder dystocia Drill	Dr Vidhi Chaudhary	Dr Raksha Arora
12.30 pm - 01.00 pm	Repair of complete perineal tear	Dr Anuradha	Dr Ratna Biswas
01.00 pm - 02.00 pm	LUNCH		
02.00 pm - 04.00 pm	Session4: Hands on (On Simulators)		
Internal Temponade -Balloon		Dr Reena, Dr Ratna Dr Sharda, Dr Vidhi	
B-Lynch suture and Uterine artery ligation		Dr Kiran, Dr Pikee Dr Prabha lal, Dr Swati	
Complete perineal tear repair		Dr Manju Puri, Dr Manisha Dr Anuradha, Dr Muntaha	
04.00 pm	Vote of Thanks & Tea		

Gynae Oncosurgery Video Workshop

organized by
Rajiv Gandhi Cancer Institute and Research Centre
 and

Association of Gynae Oncologists of India

Date: Friday, 17th November 2017

Time: 08:00 am Onwards

Venue: Emerald Hall (3rd Floor), Hotel Crowne Plaza, Rohini, Delhi - 110085

Chairperson - Aogd Oncology Committee: Dr Rupinder Sekhon

Organising Secretary: Dr Amita Naithani

08:00 am - 09:00 am	Registration	
09:00 am - 09:10 am	Introduction & Overview	Dr Rupinder Sekhon
	Hall Convener - Dr Urvashi And Dr Kanika Batra	
	Session I - Anatomy & Surgical Spaces Chairperson: Dr A. K. Dewan, Dr Neelam Bala Vaid, Dr Sabhyata Vaid, Dr Seema Singhal, Dr Shruti	
09:10 am - 09:20 am	Pelvic Anatomy & Pelvic spaces	Dr Anupama R
09:20 am - 09:30 am	Anatomy of Retroperitoneum	Dr Neha Kumar
09:30 am - 09:40 am	Classification & types of Radical Hyst.	Dr Amita Naithani
09:40 am - 09:50 am	Discussion	
	Session II - Radical Surgery For Cervical Cancer Chair Person: Dr Sanjeevani Khanna, Dr Amita Suneja, Dr Shaktibhan Khanna, Dr Sweta Balani, Dr S. K. Rawal	
09:50 am - 10:05 am	Open Radical Hysterectomy for Beginners	RGCI
10:05 am - 10:20 am	Robotic Radical Hysterectomy	Dr Mario L
10:20 am - 10:35 am	Lap Radical Hysterectomy	Dr Kanika Gupta
10:35 am - 10:50 am	Robotic Parameterectomy	Dr Vandana Jain
11:00 am - 11:15 am	Lamp Lighting & Presidential Address: Dr Shalini Rajaram TEA BREAK	
11:15 am - 12:00 pm	Session III -Sentinel Lymphnode - Current Controversy Chair Person: Dr Rajeev Kumar, Dr B. K. Goyal, Dr Anurag Mehta, Dr Raksha Arora	
11:15 am - 12:00 pm	Sentinel lymphnode in Ca Endometrium	Dr Anupama R
12:00 am - 12:15 pm	Sentinel lymphnode mapping in Carcinoma Vulva	Dr Mario
12:15 pm - 12:30 pm	PLND + RPLND	Dr Amita Maheshwari
12:30 pm - 13:15 pm	Panel Discussion	
	Recurrent Ovarian Carcinoma Moderator - Dr Vineet Talwar	
Panelists: Dr B K Goyal, Dr Neerja Bhatla, Dr Ankur Bahl, Dr Gauri Gandhi, Dr S. K. Giri, Dr Mario, Dr Nitesh Rohtagi, Dr Amita Maheshwari		

13:30 pm - 14:00 pm	LUNCH	
	Hall Convener - Dr Vandana Jain and Dr Amita Naithani	
14:00 pm - 14:40 pm	Session IV - Ovary and Its Challenges Chairperson: Dr Suneesh Kumar, Dr Nisha Jain, Dr S. K. Giri, Dr Vijay Zutshi	
14:00 pm - 14:10 pm	Staging laparotomy for ovarian cancer	Dr Neerja Bhatla
14:10 pm - 14:20 pm	Anatomy of omentum and total omentectomy	Dr Shivendra
14:20 pm - 14:30 pm	Robotic Ovarian Cancer Staging with paraortic lymphadenectomy upto renal vessels on XI platform	Dr Mario
14:30 pm - 14:40 pm	Discussion	
	Session V - The Robot Chairpersons: Dr Amita Maheshwari, Dr Rupinder Sekhon, Dr Mala Srivastava, Dr Sarika Gupta	
14:40 pm - 14:50 pm	Robotic injuries and repair	Dr S. K. Rawal
14:50 pm - 15:00 pm	Robotic Splenectomy & pelvic mass resection (Multi quadrant debulking)	Dr Mario
	Session VI - Vulva & Vagina Chairpersons: Dr Satinder Kaur, Dr Urvashi, Dr Swasti, Dr Gauri Gandhi, Dr Rajan Arora	
15:00 pm - 15:10 pm	Radical Vulvectomy with groin node dissection	Dr S. K. Giri
15:10 pm - 15:20 pm	Flap reconstruction after radical Vulvectomy	Dr S. K. Giri
15:20 pm - 15:30 pm	Total Vaginectomy	Dr Rupinder Sekhon
	Session VII - Fertility Sparing Surgery Chairpersons: Dr Harsh Khullar, Dr Gouri, Dr Vineeta Kumar, Dr Sarita Shyam Sunder, Dr S. N. Basu	
15:30 pm - 15:40 pm	Cone biopsy of cervix and LEEP	Dr Vijay Zutshi
15:40 pm - 15:50 pm	Robotic Radical Trachelectomy	Dr Mario
15:50 pm - 16:00 pm	Robotic Ovariopexy	Dr Sabhyata
16:00 pm - 16:10 pm	Ovarian tissue Preservation	Dr Pankaj Talwar
TEA		

Urogynaecology Precongress Workshop

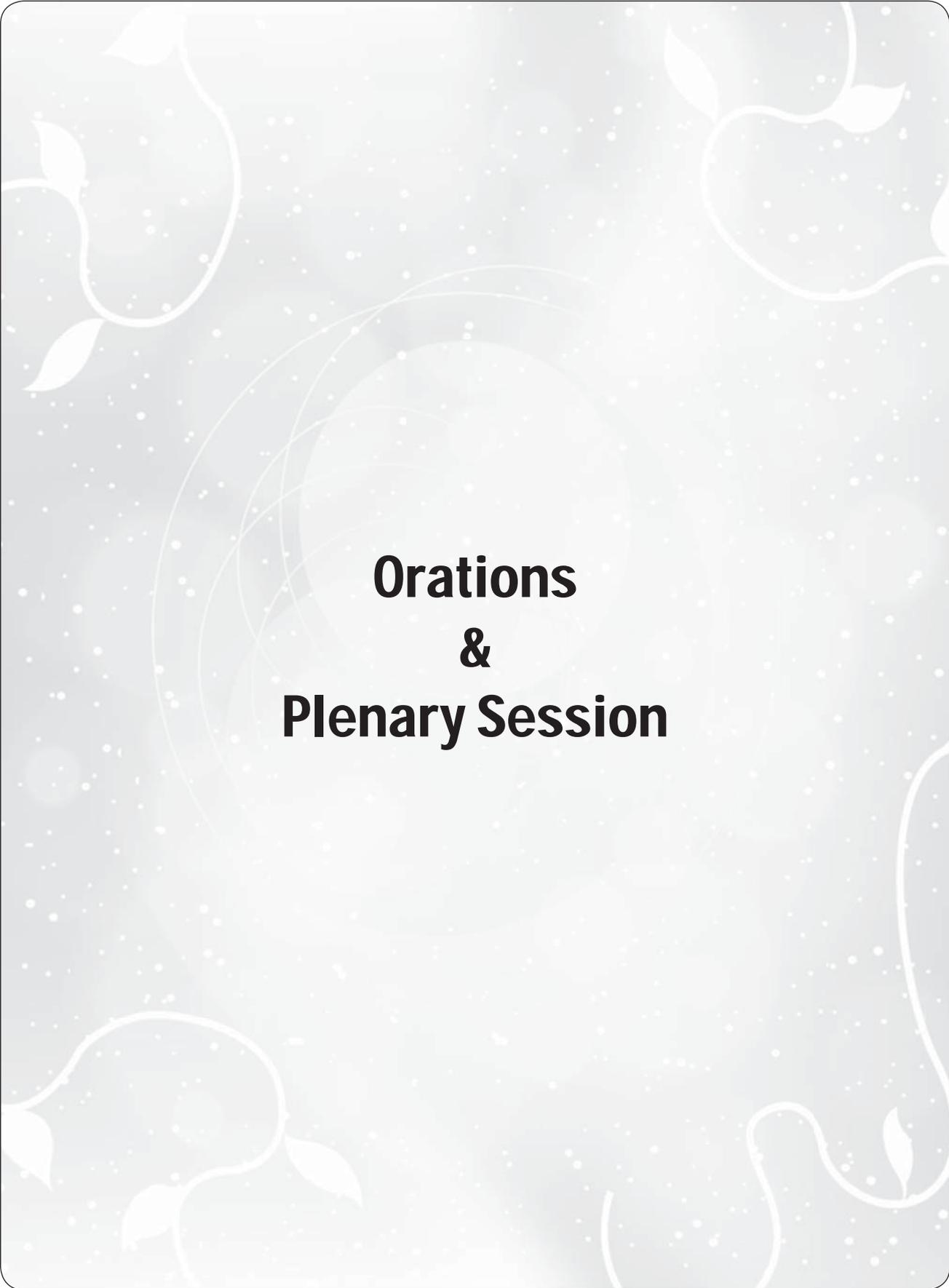
Venue: The Surya Hotel, Okhla Road, New Delhi

Organizing Chairperson: Dr Rajesh Ahlawat

Organizing Secretary: Dr Amita Jain

08:20 am - 08:30 am	Welcome Address	Dr Rajesh Ahlawat
Lecture I		
08:30 am - 08:50 am	Innovative Pelvic Floor Rehabilitation: Biological Rationale and Clinical Application	Dr Aparna Hegde
08:50 am - 09:00 am	Discussion	
Pannel Discussion I		
09:00 am - 10:30 am	Applied Anatomy and Rationale of various Reconstructive Procedures for Stress Urinary Incontinence Expert opinion: When, Which and Why?	Moderator: Dr Amita Jain
Panellists: Dr Ranjana Sharma, Dr Sanjay Sinha, Dr J B Sharma, Dr Amit Tandon, Dr Sandhya Jain		
10:30 am - 11:00 am	Tea Break	
*Live Surgery/ Video Session I		
11:00 am - 11:10 am	Midurethral sling TOT Inside out approach Outside in approach	Dr Ranjana Sharma

11:10 am - 11:20 am	Retropubic sling Down up approach Up down approach	Dr J B Sharma
11:20 am - 11:30 am	Minisling	Dr Amita Jain
11:30 am - 11:40 am	Autologous facial sling	Dr Sanjay Sinha
11:40 am - 11:50 am	Burch Colposuspension	Dr Amit Tandon
Pannel Discussion II		
11:50 am - 01:20 pm	Applied Anatomy and Rationale of various Reconstructive Procedures for Prolapse Expert opinion: When, Which and Why?	Moderator: Dr Monika Gupta
	Panellists: Dr Geeta Mediratta, Dr Dinesh Kansal, Dr Uma Rani Swain, Dr Mangesh	
*Live Surgery/ Video Session II		
01:20 pm - 01:30 pm	Sacrospinous ligament fixation	Dr Amita Jain
01:30 pm - 01:40 pm	Sacrocolpopexy	Dr Dinesh Kansal
01:40 pm - 01:50 pm	High Uterosacral Ligament Suspension	Dr Uma Rani Swain
01:50 pm - 02:00 pm	Le Fort's Colpocleisis	Dr Sandhya Jain
02:00 pm - 02:10 pm	Mesh augmented repair	Dr Amita Jain
02:10 pm - 03:00 pm	Lunch Break	
Lecture II		
03:00 pm - 03:20 pm	Complications after Pelvic Floor Surgery: How to Stay out of Trouble	Dr Sanjay Sinha
03:20 pm - 03:30pm	Discussion	
Lecture III		
03:30 pm - 03:50 pm	New hope for control on Overactive bladder: Mirabegron	Dr Pawan Vasudeva
03:50 pm - 04:00 pm	Discussion	
Lecture IV		
04:00 pm - 04:20 pm	Bladder Pain Syndrome – Efficient & Effective Treatment in a busy Gynae Practice	Dr Sanjay Pandey
04:20 pm - 04:30 pm	Discussion	
04:30 pm - 04:40 pm	Vote of thanks	Dr Amita Jain
04:40 pm onwards	Tea	



**Orations
&
Plenary Session**

Unfurling the Facts of Assisted Reproduction Technologies

Prof. Sudha Prasad

Vice President Elect FOGSI 2019, Director Professor, Deptt. of Obstetrics & Gynaecology, MAMC & LNJP Hospital, Delhi



Lots of transformation has occurred in assisted reproduction the field of infertility since its inception in 1978¹. Major milestones include the use of controlled ovarian hyperstimulation, luteal phase support, and ready to use culture media. Other significant advances followed with the development of Intracytoplasmic sperm injection (ICSI), assisted hatching, and advanced ET techniques^{2,3,4}. These advances both improved the success rates and also its availability to all suffered individuals. However, for years this technique was available in private sectors, hence, was out of reach to many non-affording individuals. With the availability of ART facility in few public sectors, it has become a boon for these strata of women.

Two of the chief concerns that emerged during the development of ART were the persistent risk of patients experiencing ovarian hyperstimulation syndrome (OHSS) and/or a marked increase in the risk of multiple gestation pregnancies⁵.

Recently, it has been highlighted that the stimulation should be with “minimal stimulation” protocols⁶. In many studies, lower doses of injectable gonadotropins were used and results were comparable in term of successful pregnancy with decreased complications.

Another recent strategy to minimizing the risk of OHSS is the use of gonadotropin releasing hormone agonist, instead of human chorionic gonadotropin, to trigger ovulation during an IVF cycle⁷.

ART is also associated with an increased rate of multiple gestations if multiple embryos are transferred into the uterus. Multiple gestation pregnancies are associated with increased complications, both to mother and child, as well as increased medical and obstetrical problems. This can be solved by transfer of one or two embryos. The American Society for Reproductive Medicine has made formal recommendations to use of single embryo transfer in IVF cycles; essentially eliminating the risk of IVF associated multiple gestations. Various other modifications are also done to optimize pregnancy rates like optimal oxygen concentration for incubators with optimal pH of media, assisted hatching and ICSI.

Cryopreservation of oocytes and embryos is the most significant advancement in assisted reproduction. The new technique of vitrification minimizes the possibility of embryonic toxicity with better pregnancy rate⁸.

Oocyte cryopreservation is increasingly being offered as a method of fertility preservation for oncology patients prior to receiving chemo or radiation therapy⁹. Cryopreservation of non-stimulated ovarian cortical tissue for the purpose of fertility preservation for oncology patients has also been done, although with limited success.

Early embryogenesis is a dynamic process which can be assessed by non-invasive assessment by time lapse imaging and videography. Incubators equipped with built in time lapse and video equipment now allow the real time evaluation of the dynamic changes that occur during early embryo development.

The scope of recent advances in the field of assisted reproductive technologies is confounding. ART has had a tremendous impact on medicine since its introduction in 1978. For infertile couples, these advances promise to further improve the effectiveness, convenience, and availability of infertility treatment.

References

1. Zhao Y, Brezina P, Hsu CC, et al. In vitro fertilization: four decades of reflections and promises. *Biochim Biophys Acta*. 2011;1810:843-52.
2. Palermo G, Joris H, Devroey P, Van Steirteghem AC. Pregnancies after intracytoplasmic injection of single spermatozoon into an oocyte. *Lancet*. 1992; 340:17-8.

3. Brezina P, Zhao Y. Laser assisted zona hatching: what is the evidence to justify its use? *Middle East Fertil Soc J.* 2011; 16:107–9.
4. Brezina P, Muasher S. The art and science of embryo transfer: what information are we lacking? *Middle East Fertil Soc J.* 2010; 15:14–20
5. Brezina PR, Zhao Y: The Ethical, Legal, and Social Issues Impacted by Modern Assisted Reproductive Technologies. *Obstet Gynecol Int* 2012, 2012:686253.
6. Zarek SM, Muasher SJ: Mild/minimal stimulation for in vitro fertilization: an old idea that needs to be revisited. *Fertil Steril.* 2011; 95:2449-55.
7. Sismanoglu A, Tekin HI, Erden HF, et al. Ovulation triggering with GnRH agonist vs. hCG in the same egg donor population undergoing donor oocyte cycles with GnRH antagonist: a prospective randomized cross-over trial. *J Assist Reprod Genet.* 2009; 26:251-6.
8. Shufaro Y, Schenker JG. Cryopreservation of human genetic material. *Ann N Y Acad Sci.* 2010; 1205:220–4.
9. Kenny A, Rodriguez-Wallberg, Tom Tanbo, Helena Tinkanen, Ann Thurin-Kjellberg, Elizabeth Nedstrand et al. Ovarian tissue cryopreservation and transplantation among alternatives for fertility preservation in the Nordic countries – compilation of 20 years of multicenter experience. *Acta Obstet Gynecol Scand.* 2016; 95: 1015–1026.

Abnormal Uterine Bleeding: Evidence Based Practice

Dr Alka Kriplani

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Introduction:

Abnormal uterine bleeding (AUB) in the reproductive years is defined as bleeding from the uterine corpus, that is abnormal in duration, volume, frequency and/or regularity in absence of pregnancy¹. AUB has been classified by International Federation of Gynecology and Obstetrics (FIGO) as PALM-COEIN system which stratifies etiologies of AUB into nine categories, where "PALM" stands for structural causes that can be diagnosed with imaging techniques with or without histopathology i.e. **P**olyp, **A**denomyosis, **L**eiomyoma and **M**alignancy/Hyperplasia. "COEIN" represents non-structural causes and include **C**oagulopathy, **O**vulatory dysfunction, **E**ndometrial, **I**atrogenic, and **N**ot yet classified).

FIGO has also redefined the normal limits of menstrual parameters. Normal frequency of menses is taken as 24-38 days, normal duration of flow as 4.5-8 days and normal volume of monthly blood loss as 20-80 mL. Besides, cycles are termed regular if cycle-to-cycle variation is $\pm 2-20$ days over 12 months.² A recent article has defined periods as regular if variation between shortest to longest cycles is upto 9 days and as irregular if this variation is 10+ days.³ Any deviation from these normal parameters is AUB.

AUB is also defined as acute and chronic. Acute AUB refers to an episode of heavy bleeding that is of sufficient quantity to require immediate intervention. AUB is termed chronic if it has been present for most of the previous six months.

Clinical evaluation of AUB:

Patients of AUB may present as heavy menstrual bleeding (HMB) or intermenstrual bleeding (IMB). HMB is a symptom and not a diagnosis, and has been described as excessive menstrual blood loss, which interferes with a woman's physical, social, emotional and/or material quality of life. AUB may be associated with dysmenorrhea and fatigue related to iron deficiency anemia.

Women with AUB may have multiple contributory factors, hence evaluation requires a comprehensive workup which should include: determination of ovulatory status, screening for systemic disorders of hemostasis, evaluation of the endometrium, evaluation of endometrial cavity and myometrium³. A structured history, simple laboratory tests, and transvaginal ultrasound can completely evaluate women with AUB. Predictable cyclic menses are usually associated with ovulation, whereas periods are irregular in AUB-O. A structured history can also screen for bleeding disorders with 90% sensitivity⁴. Examination includes assessment of weight, BMI, pallor, thyroid, breasts, acne, FG score (if hirsutism is present), abdominal, P/S and P/V examination. Pregnancy should always be ruled out.

Investigations for AUB:

Investigations include complete blood count and TSH when clinically indicated. Bleeding time, platelet count, prothrombin time, and partial thromboplastin time are recommended in all adolescents and in adults with a positive screen for coagulopathies. Further testing for von Willebrand disease, ristocetin cofactor activity, factor VIII activity, and von Willebrand factor antigen may be needed in consultation with a hematologist. Ultrasonography is done to evaluate for structural pathology and endometrial thickness. Hysteroscopy is done for diagnosis of intracavitary lesions and to assess the type of myomas. 3D USG is a non-invasive alternative to hysteroscopy. Saline infusion sonography is also an option if intracavitary lesion is suspected and hysteroscopy is not available. In suspected arteriovenous malformation and malignancy, doppler is needed. MRI may be required to differentiate between fibroids and adenomyoma; for mapping exact location of fibroids while planning conservative surgery and prior to therapeutic embolization for fibroids⁵.

Assessment of endometrium by endometrial histopathology should be done in women >40 years and also in women <40 years with high risk factors such as irregular bleeding, obesity, hypertension, PCOS, diabetes, endometrial thickness >12 mm on ultrasound, family history of malignancy of ovary/breast/endometrium or colon, use of tamoxifen for HRT or breast cancer, HNPCC, AUB unresponsive to medical treatment^{3,5}. If endometrium is thick on imaging, but where HPE is inadequate or atrophic, hysteroscopy should be performed to rule out polyps.

Management of AUB:

Successful management of AUB includes identification of the potential contributors to the symptoms as well as age and plans for immediate or future fertility.

AUB-P: Medical management is ineffective for polyps. Younger women who wish to preserve fertility are managed by hysteroscopic polypectomy which should be sent for histopathology (HPE). In women with multiple or recurrent endometrial polyps and not desirous of continued fertility, hysteroscopic polypectomy may be followed by LNG-IUS insertion after confirmation of benign lesion on histopathology.

AUB-A: AUB-A is generally refractory to medical management and the definitive cure is surgery; however medical management is offered to selected patients who are younger and wish to preserve fertility. LNG-IUS is the first-line medical therapy in women not desirous of preserving fertility. Even if fertility is desired, LNG-IUS can be given for short duration to control symptoms, if she is not planning conception for at least one year. In patients desirous of preserving fertility but unwilling to use LNG-IUS or not responding to LNG-IUS; gonadotropin releasing hormone (GnRH) agonists with add-back therapy is an option for temporary relief as second-line therapy. NSAIDs, progestogens, COCs and danazol can be offered for symptomatic relief where LNG-IUS and GnRH agonists cannot be given. Adeno-myomectomy is the conservative surgery that may be offered to infertile patients.

AUB-L: Management should be individualized according to age, parity, symptoms, fertility desire, location and size of fibroids may affect the treatment preference. Medical management may be initiated for small (<4 cm) symptomatic fibroids, or prior to surgery to reduce bleeding, correct anemia and reduce fibroid volume and also to peri-menopausal women. Tranexamic acid, COCs or NSAIDs can be used to control AUB in women trying to conceive. Other medical options include ulipristal acetate (progesterone receptor modulators), mifepristone (anti-progestins), LNG-IUS except in type 0 & 1. GnRH agonists can be given for up to 6 months for improving general condition, anaemia; in selected patients prior to myomectomy, in younger patients to delay/avoid early surgical intervention and in selected perimenopausal women so that they can tide over to menopause with add-back therapy. In patients with infertility due to myoma, myomectomy is recommended which may be done hysteroscopically for sub-mucosal myomas type 0 and 1, less than 4 cm in size. Hysterectomy is offered to women >40 years, not desirous of preserving uterus.

Selected patients of AUB-L can be managed by newer modalities such as UAE, or high intensity focussed ultrasound (HIFU). UAE and HIFU are alternatives to medical treatment and surgical options. These procedures are a relative contraindication if future childbearing is required.

AUB-M: AUB-M includes both malignancy and hyperplasia. Standard protocol for management is followed for malignancy. For endometrial hyperplasia with atypia, hysterectomy is the standard treatment. Conservative treatment with high-dose progestins and close histological monitoring should only be considered in exceptional cases (when the patient wants to have children and compliance is satisfactory) for short periods till the patient completes family. But before medical management of atypical endometrial hyperplasia, patient should be counselled about the risk of cancer development.

In AUB-M with endometrial hyperplasia without atypia, LNG-IUS can be considered as first-line therapy; alternatively oral progestins such as medroxyprogesterone acetate (MPA) can be used. LNG-IUS is better than MPA in decreasing menstrual bleeding, reducing endometrial thickness with lesser relapse rate. In patients who prefer to preserve fertility, even a six-month application of LNG-IUS is shown to provide effective treatment.

Preventive hysterectomy for endometrial hyperplasia without atypia should be considered in high risk cases (e.g., extreme obesity without any prospect of weight loss, early age at menarche, older age, obesity, increased estrogen status, diabetes, history of breast cancer, family history of endometrial cancer and radiation therapy to pelvis for any other cancer).

AUB-COEIN: Management guidelines⁵:

In case of AUB-C, AUB-O, or AUB-E, medical treatment is the first-line therapy. Non-hormonal treatment includes

tranexamic acid, NSAIDs (not in AUB-C) or cyclic progestins from day 5-25 of cycle. In women desiring effective contraception, LNG-IUS and combined oral contraceptives are the options. Irregular or prolonged bleeding of AUB-O is most effectively treated with hormonal options that regulate cycles; underlying thyroid or prolactin disorder should also be treated and PCOS patients should be advised weight loss. Cyclic luteal-phase progestins from day 15-25 is effective only in AUB-O. For AUB due to other causes 21-day progestins therapy is needed. Ormeloxifene, a selective estrogen receptor modulator is a non-steroidal option for treating AUB-COEIN in patients needing simultaneous contraception or in women with hypertension, diabetes and thromboembolic disease where steroidal agents are contraindicated.

GnRH agonists with add-back hormone therapy are recommended as a last resort when other medical treatments for AUB have failed or are contraindicated. The surgical treatment in AUB should be reserved for patients with concomitant significant intracavitary lesions and for failures, contraindication or intolerance to medical therapy. Failure of medical management also requires further investigation, including imaging or hysteroscopy if not done prior. Endometrial ablation is a minimally invasive option for management of AUB and may be offered if there is failure to medical treatment and patient is high risk for hysterectomy. All AUB patients should be given haematinics to treat /prevent anemia. Treatment for AV malformations should be individualized with refractory cases requiring uterine artery embolization.

References

1. Munro MG, Critchley HO, Broder MS, et al. FIGO classification system (PALM-COEIN) for causes of abnormal uterine bleeding in nongravid women of reproductive age. *Int J Gynaecol Obstet.* 2011;113(1):3-13.
2. Munro MG, Critchley HO, Fraser IS. The FIGO systems for nomenclature and classification of causes of abnormal uterine bleeding in the reproductive years: who need them? *Am J Obstet Gynecol.* 2012;207(4):259-65.
3. Munro MG. Practical aspects of the two FIGO systems for management of abnormal uterine bleeding in the reproductive years. *Best Pract Res Clin Obstet Gynaecol.* 2017;40:3-22.
4. Kadir RA, Economides DL, Sabin CA, Owens D, Lee CA. Frequency of inherited bleeding disorders in women with menorrhagia. *Lancet* 1998;351(9101):485-9.
5. Kriplani A, Kulshrestha V, Agarwal N. Good clinical practice recommendations on abnormal uterine bleeding. *J Obstet Gynecol India.* 2017; 67(2):S I-XI.

Prioritizing Surgical Safety and Minimising Surgical Infections

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Global Data

The number of surgical procedures worldwide have increased exponentially over the years and while it is true that surgery saves lives and is the necessary treatment for a number of causes, surgical safety has become a major issue. It was only in 2008 that WHO stepped in to intervene when the number of surgeries world-wide increased to 234 million with a complication rate of 3-17%, 10-100 times more deaths due to surgery than childbirth, leaving 7 million disabled and 1 million dead¹. In 2012 there was a further increase of 39% in number of surgeries to 359 million. The International studies outcome group analysed 44,812 patients from 27 countries. There were 16.8% peri-operative complications with a 2.8% mortality. 205 died (0.5%) if there were no complications. Surgical site infections are the most common cause of morbidity in about 10% (20% are severe)^{2,3}. Surgery and its outcome is an interplay between experience, complexity of surgery, team work, level of skill and competency, anaesthetic risks, surgical site infections and surgical safety checklists. Surgery accounts for 40% of all hospital adverse events⁴.

Surgical Safety Checklist

In 2008 WHO called a meeting of several experts in Geneva and eight hospitals were chosen to test the surgical safety checklist, six from developed countries and two from developing countries. St. Stephen's hospital in Delhi participated in this study. Data was collected from 3955 patients undergoing non-cardiac surgery and compared with retrospective data from the same hospitals. Just by introducing the surgical safety checklist there was a reduction in complication rate by 36% (11% vs. 7% $p < 0.001$) and death rate by 50% (1.5 vs. 0.8% $p < 0.003$)⁵. The safety checklists are now used world over and has checks before induction of anaesthesia, before skin incision and before closure. The entire process takes just 2 minutes but it cannot be ticked by a single person. The chief surgeon should take lead and everyone stops and introduces themselves while a member of the surgical team verbalises and vocalises the checkpoints. This ensures better communication between the surgical, anaesthetic and nursing staff in care of the patient with better outcomes. The checklists can be modified to suit the surgical speciality. The surgical safety checklist was studied by the Society of Obstetrics & Gynecology of Canada and essentially endorses its adoption in the speciality with certain modifications especially for emergency 'crash' caesarean sections. Checkpoints for fetal status, need for neonatal resuscitation and resuscitation equipment has been added⁶.

Antibiotic Prophylaxis

The second part of the topic is minimising surgical infections. While there can be no substitute for meticulous surgery, competence, skill and perfect hemostasis, certain interventions are known to reduce surgical site infections (SSIs). In a large study of 35,543 surgical patients antimicrobial prophylaxis, ensuring euglycemia, maintaining normothermia, oxygenation and avoidance of shaving reduced SSIs by half⁷. In addition minimising OR traffic, pre-operative shower with chlorhexidine, surgical site preparation with chlorhexidine, meticulous technique and minimally invasive surgery are known to reduce risk⁸. Chlorhexidine-alcohol is a superior cleansing agent as compared to Povidone-Iodine⁹. Interventions that do reduce infections are antimicrobial sealants, dressings, irrigations, cleansing in concentric circles etc. Appropriate antimicrobial prophylaxis is safe and effective provided adequate serum and tissue levels are achieved before incision (15-60 minutes) and dose is repeated if blood loss is more than 1500 ml or surgery prolonged more than 3 hours. Prophylactic IV cefazolin is the preferred antibiotic as it has good cover against gram positive organisms in addition to a good gram negative cover¹⁰. 1 g IV for women < than 80 Kg, 2g IV for women > 80kg and 3g IV for those over 120 kg. Vancomycin and Teicoplanin are the only antibiotics that have shown 100% sensitivity to *Staphylococcus aureus*¹⁰. Finally the

closing pan where all instruments for closure are fresh and the surgeons change their gloves before closing has also shown to reduce SSIs¹¹.

Evidence

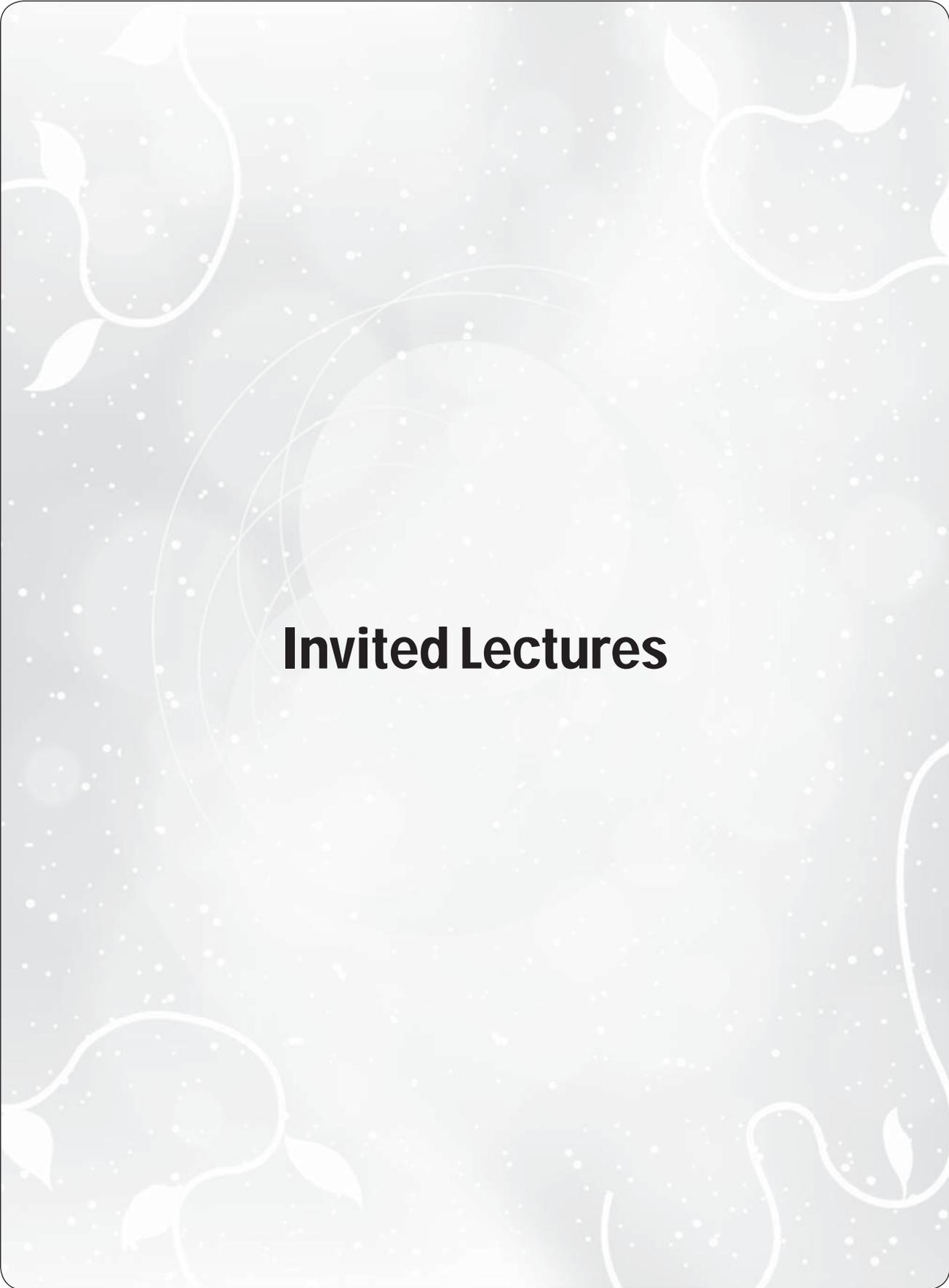
The Cochrane analysis studied antibiotic prophylaxis in elective hysterectomy and published results recently¹². Prophylaxis in vaginal hysterectomy reduced post-operative infections, pelvic infections, UTI and post-operative fever from 34% to 7-14%. Abdominal hysterectomy infection rates reduced from 16% to 1-6%. Antibiotic prophylaxis is effective in preventing postoperative infections in women undergoing elective vaginal or abdominal hysterectomy. However, there was no conclusion on which is the best antibiotic, dose or route of administration that is safe and effective.

Guidelines¹³

1. All women undergoing an abdominal or vaginal hysterectomy should receive antibiotic prophylaxis. (I-A)
2. All women undergoing laparoscopic hysterectomy or laparoscopically assisted vaginal hysterectomy should receive prophylactic antibiotics. (III-B)
3. The choice of antibiotic for hysterectomy should be a single dose of a first-generation cephalosporin. If patients are allergic to cephalosporin, then clindamycin, erythromycin, or metronidazole should be used. (I-A)
4. Prophylactic antibiotics should be administered 15 to 60 minutes prior to skin incision. No additional doses are recommended. (I-A)
5. If an open abdominal procedure is lengthy (e.g., > 3 hours), or if the estimated blood loss is > 1500 mL, an additional dose of the prophylactic antibiotic may be given 3 to 4 hours after the initial dose. (III-C)
6. Antibiotic prophylaxis is not recommended for laparoscopic procedures that involve no direct access from the abdominal cavity to the uterine cavity or vagina. (I-E)
7. All women undergoing surgery for pelvic organ prolapse and/or stress urinary incontinence should receive a single dose of first-generation cephalosporin. (III-B)
8. Antibiotic prophylaxis is not recommended for hysteroscopic surgery. (II-2D)

References

1. Weiser TG. An estimation of the global volume of surgery: a modelling strategy based on available data. *Lancet*. 2008; 372(9633):139-44. doi: 10.1016/S0140-6736(08)60878-82.
2. Weiser TG, Haynes AB, Molina G, Lipsitz SR, Esquivel MM, Uribe-Leitz T et al Size and distribution of the global volume of surgery in 2012. *Bulletin of the World Health Organization* 2016;94:201-209F doi:http://dx.doi.org/10.2471/BLT.15.159293
3. Global patient outcomes after elective surgery: prospective cohort study in 27 low-, middle- and high-income countries. The International Surgical Outcomes Study group† *British J Anaesthesia* 2016; 117(5):601-9
4. De Vries EN, Ramrattan MA, Smorenburg SM, Gouma DJ, Boormeester MA. The incidence and nature of in-hospital adverse events: a systematic review. *Qual Saf Health Care* 2008;17(3):216-23
5. Haynes A, Weiser T, Berry W, Lipsitz SR, Breizat AH, Dellinger EP, et al *N Engl J Med* 2009;360(5):491-9.
6. Surgical Safety Checklist in Obstetrics and Gynaecology. *J ObstetGynaecol Can* 2012;35(1 eSuppl B):S1-S5
7. Dellinger EP, Hausmann SM, Bratzler DW, Johnson RM, Daniel DM, Bunt KM et al Hospitals collaborate to decrease surgical site infections *Am J Surg*. 2005;190(1):9-15
8. Tuuli MG, Liu J, Stout MJ, Martin S, Cahill AG, Odibo AO et al A Randomized Trial Comparing Skin Antiseptic Agents at Cesarean Delivery. *N Engl J Med*.2016;374(7):647-55.
9. Darouiche RO, Wall MJ Jr, Itani KM, Otterson MF, Webb AL, Carrick MM et al. Chlorhexidine-Alcohol versus Povidone-Iodine for Surgical-Site Antisepsis. *N Engl J Med*. 2010;362(1):18-26.
10. Chongsomchai C1, Lumbiganon P, Thinkhamrop J, Ounchai J, Vudhikamraksa N Placebo-controlled, double-blind, randomized study of prophylactic antibiotics in elective abdominal hysterectomy. *J Hosp Infect* 2002;52(4):302-6
11. Hewitt DB, Tannouri SS, Burkhart RA, Goldstein SD, Phillips BR. Reducing colorectal surgical site infections: a novel, resident-driven, quality initiative. *Am J Surg* 2017;213:36-42
12. Ayeleke RO1, Mourad S, Marjoribanks J, Calis KA, Jordan V. Antibiotic prophylaxis for elective hysterectomy. *Cochrane Database Syst Rev*. 2017 Jun 18;6:CD004637. doi: 10.1002/14651858.CD004637.pub2.
13. Van Eyk N, Van Shawlyk. Antibiotic Prophylaxis in Gynecologic Procedures. *J ObstetGynecol Canada* 2012;34(4): 382-91

The background of the page is a light gray gradient. It features several white, stylized floral or leaf-like motifs scattered across the surface. In the center, there is a large, faint circular graphic composed of multiple overlapping, thin white lines that form a spiral or concentric pattern. The overall aesthetic is clean and modern.

Invited Lectures

Predictors of Preeclampsia: From bench to bedside

Dr Soma Mukherjee

Head of Fetal Medicine Unit, University of Warwick, United Kingdom



Worldwide, the prevalence of Preeclampsia (PE) is 3-8% and the incidence is 3-5%, with a higher incidence in developing countries.

PE is one of the leading causes of fetal and maternal morbidity and mortality. PE/eclampsia accounts for 14% of all maternal deaths.

Preeclampsia is defined as a new onset of:

Hypertension (> 140 / 90 mmHg)

Proteinuria (\geq 0.3 g / 24 h) after 20 weeks gestation

Preeclampsia is classified by the time of onset and severity of symptoms:

- Early-onset preeclampsia: before 34 weeks
- Late-onset preeclampsia: starting at 34 weeks of gestation and after

An imbalance of placental angiogenic and antiangiogenic factors are thought to play an important role in the pathogenesis of PE.

Clinical management can be challenging due to:

- A lack of effective treatment options other than delivery
- The need for reliable tests to assess disease severity and progression, and for predicting PE related complications
- The necessity to balance maternal and fetal risks, which may be in opposition
- The need for reliable identification of high-risk PE patients to be referred to a specialised perinatal care centre.

However, diagnosis of PE is not straightforward:

- Clinical presentation and the clinical disease course can be highly variable
- Blood pressure and urine protein level measurements lack sensitivity and specificity for assessing disease severity or predicting the course of the disease.

1. sFlt-1/PIGF ratio < 38 rules out PE, irrespective of gestational age, for at least 1 week. Further management is according to the clinician's discretion
2. sFlt-1/PIGF ratio > 85 (early-onset PE) or > 110 (late-onset PE). Diagnosis of PE or placenta-related disorder is likely. Management should be according to local guidelines.
3. Severely elevated sFlt-1/PIGF ratios (> 655 at <34 + 0 weeks; > 201 at \geq 34 + 0 weeks) are associated closely with the need to deliver within 48 hours. Close surveillance and (if <34weeks) prompt initiation of antenatal corticoids to accelerate fetal lung maturation are mandatory.

Re-measure after 2–4 days to determine trend and follow up according to clinician's discretion depending on severity. The test frequency can be adapted to the clinical situation and trend in sFlt-1/PIGF ratio dynamics.

The sFlt-1/PIGF ratio provides information about the patient before the onset of overt signs and symptoms.

An sFlt-1/PIGF ratio of 38–85 or 38–110 provides extra information as to which women are at moderate or high risk of developing PE within 4 weeks. Current PE or a placenta-related disorder can be ruled out, but women are at (high) risk (especially in the early-onset group).

Early onset: Consider a follow-up sFlt-1/PIGF test in 1–2 weeks, according to the individual clinical situation

Late onset: An intermediate result of the sFlt-1/PlGF ratio is suggestive of impending placental dysfunction, so consider lowering the threshold for delivery

The sFlt-1/PlGF ratio has been proven as an aid in diagnosis for PE in a woman with PE already confirmed (high blood pressure and proteinuria)

The sFlt-1/PlGF ratio may be useful to determine the severity of the disorder

Maternal complications cannot be avoided completely but women at high risk can be hospitalised

No data exist on the usefulness of the sFlt-1/PlGF ratio to avoid maternal complications

No data exist to show that maternal outcome is better now than it was before use of the sFlt-1/PlGF ratio

No randomised controlled trials have been performed to test the usefulness of the sFlt-1/PlGF ratio regarding maternal or fetal outcomes

The test should be used in the high-risk population

The economics and resource utilisation need to be considered too

PROGNOSIS derived and validated cut-off of 38 with excellent 'rule out' capacity

In women with suspected preeclampsia, the ELECSYS® immunoassay sFlt-1/PlGF ratio cut-off of 38 can help rule out preeclampsia within the next week, independent of gestational age

UK NICE – Diagnostics Guidance to aid diagnose suspected pre-eclampsia *DG23 Published 11 May 2016*

"The Elecsys immunoassay sFlt-1/PlGF ratio, used with standard clinical assessment and subsequent clinical follow-up, is recommended to help rule-out pre-eclampsia in women presenting with suspected pre-eclampsia between 20 weeks and 34 weeks plus 6 days of gestation."

Late Onset Pre-eclampsia: Is the pathogenesis different

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Pre-eclampsia is clinically defined by the secondary features of a primary placental disorder. The exact cause of preeclampsia remains unknown, it is widely accepted that the genesis of preeclampsia is associated with deficient trophoblast invasion leading to generalized endothelial dysfunction and an exaggerated inflammatory response. Preeclampsia is a leading cause of pregnancy-related morbidity and mortality.

In the last 3 decades, extensive research has been performed to investigate the pathogenesis and pathophysiology of preeclampsia, ways to treat preeclampsia, markers that can be used to predict preeclampsia, and its association with other factors. There are probably several subtypes of preeclampsia of which early onset pre-eclampsia (EO-PE) and late onset pre-eclampsia (LO-PE) are the best known. These are classified by the time of delivery ie EO-PE, delivered before 34 weeks and LO-PE, after 37 weeks; while the intermediate onset disease (34–37 weeks) is a mixture of both types. Although the presenting features overlap, they are associated with different maternal and fetal outcomes, biochemical markers, heritability, and clinical features. One of the major differences between the two is that EO-PE is usually complicated by reduction in placental volume, intrauterine growth restriction, abnormal uterine and umbilical artery Doppler, low birth weight, multiorgan dysfunction, perinatal death, and

adverse maternal and neonatal outcomes while LO-PE is not. Late onset pre-eclampsia is a maternal disorder, a result of an underlying maternal constitutional disorder. It is more often associated with a normal placenta, larger placental volume, normal fetal growth, normal uterine and umbilical artery Doppler evaluation, normal birth weight, and more favourable maternal and neonatal outcomes. Thus there is a clear placental pathology with EO-PE while LO-PE placentas are usually normal to routine clinic-pathological examination.

The pathology of EO-PE comprises lesions of utero-placental malperfusion. These are associated with maladaptation of the utero-placental spiral arteries in early pregnancy (8–18 weeks, poor placentation) such that they are too small and too contractile to sustain the non-pulsatile, high volume, low-pressure flow needed by the third trimester placenta. The result is oxidative stress and even infarction that damage placental tissue. The spiral arteries may also be obstructed by acute atherosclerosis and atherosclerosis-like lesion that causes arterial thrombosis, which underlies the infarctions. The surface syncytio-trophoblast layer, in direct contact with maternal blood, appears to be particularly vulnerable to damage. It is also the source of 'pre-eclampsia biomarkers' such as sFlt-1 or placental growth factor (PlGF).

Changes in the circulating sFlt-1 and PlGF levels at term indicate that syncytio-trophoblast damage is an increasing feature of normal pregnancy. Moreover, the pathology, visible only to electron microscopy reveals widespread syncytio-trophoblast damage. Evidence says that this results from diffuse placental hypoxia, which develops as the placenta outgrows the capacity of the uterus and its vasculature to support the increasing demands of the term placenta, Hence EO-PE and LO-PE both result from the same problem, malperfusion, which has very different causes. Much can be learned about diagnosis, treatment, and management of preeclampsia by contrasting findings of these 2 entities as they relate to pathogenesis, angiogenic, antiangiogenic, growth, immunological, and endothelial and pregnancy-related factors. In the postpartum period, levels of sFlt1 have been shown to remain higher in women with early-onset preeclampsia compared with controls, whereas concentrations of sFlt1 do not differ between women with late-onset disease and controls. Recent studies have shown that a ratio of sFlt1 to PlGF is more strongly associated with preeclampsia than either measure alone. However, no significant differences in the sFlt1:PlGF ratio have been found between women with early-onset and late-onset preeclampsia.

Early- and late-onset preeclampsia may differ with respect to a number of angiogenic, antiangiogenic, immunological, and oxidative factors. However, more research is needed to determine whether these are 2 distinct disorders, or simply a spectrum of disease severity across a range of gestational ages.

References

1. Hernandez-Diaz S, Toh S, Cnattingius S. Risk of preeclampsia in first and subsequent pregnancies: prospective cohort study. *BMJ*. 2009;338:1–5.
2. Crispi F, Llurba E, Dominguez C, et al. Predictive value of angiogenic factors and uterine artery Doppler for early- versus late-onset preeclampsia and intrauterine growth restriction. *Ultrasound Obstet Gynecol*. 2008;31:303–309.
3. Wang A, Rana S, Karumanchi SA. Preeclampsia: the role of angiogenic factors in its pathogenesis. *Physiology (Bethesda)*. 2009;24:147–158.
4. Guy GP, Ling HZ, Garcia P, Poon LC, Nicolaidis KH. Maternal cardiac function at 35–37 weeks' gestation: prediction of pre-eclampsia and gestational hypertension. *Ultrasound Obstet Gynecol*. 2017;49:61–66. doi:10.1002/uog.2017.49.issue-1.
5. Li XL, Guo PL, Xue Y, Gou WL, Tong M, Chen Q. An analysis of the differences of early and late preeclampsia with severe hypertension. *Pregnancy Hypertens*. 2016;6:47–52.
6. Zeisler H, Llurba E, Chantraine F, Vatish M, Staff AC, Sennström M, Olovsson M, Brennecke SP, Stepan H, Allegranza D, et al. Predictive value of the sFlt-1: PlGFRatio in women with suspected preeclampsia. *N Engl J Med*. 2016;374:13–22. doi:10.1056/NEJMoa1414838.

Drug Treatment in Hypertensive Disorders of Pregnancy

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Hypertensive disorders of pregnancy (HDP) are classified in 4 categories- i). Preeclampsia/eclampsia- presence of BP > 140/90 mm Hg after 20 weeks on 2 or more occasions 4 hours apart along with albuminuria or presence of any severe feature even without albuminuria whereas eclampsia is occurrence of seizures in the presence of preeclampsia 2) Gestational Hypertension- presence of BP > 140/90 mm Hg after 20 weeks on 2 or more occasions 4 hours apart; 3) Chronic hypertension- hypertension antedating pregnancy or diagnosed before 20 weeks and 4) Chronic hypertension with superimposed preeclampsia diagnosed when a woman with chronic hypertension develops worsening hypertension with new onset proteinuria or other features of preeclampsia¹

What are the indications of antihypertensive treatment in HDP?

Blood pressure greater than 160 systolic or 110 diastolic are indications for antihypertensive therapy for prevention of serious maternal complications such as stroke according to ACOG Task Force Recommendations¹. The main concern of treating at lower levels of BP, is the risk of fetal growth restriction; however a recent meta-analysis has proved the contrary². Further it has been seen that prevention of severe hypertension in pregnant women may have maternal and fetal benefits since severe hypertension is often associated with adverse maternal & fetal outcomes³. Keeping these facts in mind, many clinicians use the cut off values as 150/100 mm Hg to begin anti-hypertensive in HDPs as has also been recommended in the NICE guidelines.⁴ A lower threshold of treatment is also indicated in case of severe symptoms e.g BP > 140/90 with severe headache, scotomas, blurring of vision etc.

Treatment of acute severe hypertension in pregnancy

- Acute onset severe systolic/diastolic hypertension or both (> 160/110; persistent >15 minutes) can occur during antenatal, intrapartum or postpartum period
- Requires urgent anti hypertensive therapy.
- Goal is to achieve 140–150/90–100 mm Hg and to achieve maternal stabilization before delivery
- If transfer to a tertiary center- stabilize BP & MgSO₄ given before transfer
- The first line treatment consists of either IV Labetalol or IV Hydralazine or oral Nifedepine especially in cases where IV access is not established. The detailed doses and protocol is shown in Table 1⁵.

Table 1: Treatment of acute emergent hypertension⁵

Option 1	Option 2	Option 3
LABETALOL	HYDRALAZINE	NIFEDIPINE
20mg IV ↓ BP in 10 min BP ≥ threshold give 40mg IV ↓ BP in 10 min BP ≥ threshold give 80 mg IV ↓ BP in 10 min BP ≥ threshold give 10mg IV Hydralazine	5-10 mg IV ↓ BP in 20 min BP ≥ threshold give 10 mg IV ↓ BP in 20 min BP ≥ threshold give 20 mg IV labetalol ↓ BP in 10 min BP ≥ threshold labetalol 40mgIV	10 mg oral ↓ BP in 20 min BP ≥ threshold give 20 mg oral ↓ BP in 20 min BP ≥ threshold give 20 mg oral ↓ BP in 20 min BP ≥ threshold labetalol 40mgIV

Drugs for non-emergent hypertension in pregnancy (when BP is lower than 160/110, but treatment indicated)

Labetalol: Is the initial drug of choice in most cases of hypertension in pregnancy. MOA- Peripheral alpha-1 and (non-selective) beta-1 and 2 receptor antagonist -decreased peripheral vascular resistance with no reflex increase in heart rate; Dose- 100–400 mg PO BID-QID (max 2400 mg/day); Side effects- postural hypotension, maternal hepatotoxicity, which although rare, is important to recognize as it may be confused with the elevated liver chemistries of HELLP

Methyldopa: Is preferred in chronic hypertension as the onset of action is slow (3-6 hours); MOA: Centrally acting alpha-2 receptor agonist - decreased sympathetic outflow-decreased peripheral vascular resistance; Dose 250-500 mg in divided doses, maximum 2 gm /day; Side effects- depression, drowsiness, hepatitis & cholestasis in 10% after 6 weeks treatment.

Nifedipine: MOA- Calcium channel blocker-vascular smooth muscle relaxation – decreased peripheral vascular resistance; Dose- 10–20 mg PO BID-TID,(max 120 mg/day); Side effects- headache, peripheral edema especially with high doses

Thiazide diuretics: The role of thiazide diuretics is controversial, though some guidelines suggest that these agents can be continued in women with chronic hypertension who were taking them prior to pregnancy. Significant volume depletion is not likely in this setting, since all of the fluid loss occurs within the first two weeks of use, assuming that drug dose and dietary sodium intake are relatively constant. Diuretics are not generally used in women with preeclampsia unless pulmonary edema has developed.

Clonidine: Clonidine has a similar mechanism of action as methyldopa and can be an effective drug for treatment of mild hypertension in pregnancy. However, it has bothersome side effects and the possibility of rebound hypertension if it is stopped suddenly, so other agents are preferred.

Antihypertensive drugs not recommended in pregnancy

ACE inhibitors, ARBs, direct renin inhibitors: Angiotensin converting enzyme (ACE) inhibitors, angiotensin II receptor blockers (ARBs) and direct renin inhibitors are contraindicated during pregnancy because they are associated with fetal renal abnormalities when maternal exposure has been in the latter half of pregnancy. Any woman who is on these drugs and becomes pregnant, merits a change in the anti-hypertensive.

Mineralocorticoid receptor antagonists: Spironolactone crosses the placenta and is not proven to be safe in pregnancy. The anti-androgenic activity of spironolactone has always been a concern, particularly in male fetuses.

Nitroprusside: The possibility of fetal cyanide poisoning have restricted the use of nitroprusside in pregnancy. Nitroprusside is hence given as a last resort for urgent control of refractory severe hypertension; its use should be limited to a short period of time in an emergency situation

Conclusion

Antihypertensive drug therapy forms one of the cornerstones of treatment of hypertensive disorders of pregnancy and is especially important in emergent situations. Knowledge about the correct dosage and maternal & fetal effects is therefore imperative for all practicing obstetricians.

References

1. American College of Obstetricians and Gynecologists, Task Force on Hypertension in Pregnancy. Hypertension in pregnancy. Report of the American College of Obstetricians and Gynecologists' Task Force on Hypertension in Pregnancy. *Obstet Gynecol* 2013; 122:1122.
2. Magee LA, von Dadelszen P, Rey E, et al. Less-tight versus tight control of hypertension in pregnancy. *N Engl J Med* 2015; 372:407.
3. Magee LA, von Dadelszen P, Singer J, et al. The CHIPS Randomized Controlled Trial (Control of Hypertension in Pregnancy Study): Is Severe Hypertension Just an Elevated Blood Pressure? *Hypertension* 2016; 68:1153.
4. Visintin C, Mugglestone MA, Almerie MQ, et al. Management of hypertensive disorders during pregnancy: summary of NICE guidance. *BMJ* 2010; 341:c2207.
5. Committee on Obstetric Practice. Committee Opinion No. 692: Emergent Therapy for Acute-Onset, Severe Hypertension During Pregnancy and the Postpartum Period. *Obstet Gynecol* 2017; 129:e90.

Emergency Contraception

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Introduction: Emergency contraception (EC) can prevent up to over 95% of pregnancies when taken within 5 days after intercourse. EC can be used in the following situations: unprotected intercourse, concerns about possible contraceptive failure, incorrect use of contraceptives, and sexual assault if without contraception coverage. Methods of emergency contraception are the copper-bearing intrauterine devices (IUDs) and the emergency contraceptive pills (ECPs). A copper-bearing IUD is the most effective form of emergency contraception available. The emergency contraceptive pill regimens recommended by WHO are ulipristal acetate, levonorgestrel, or combined oral contraceptives (COCs) consisting of ethinyl estradiol plus levonorgestrel.

Definition: Emergency contraception refers to methods of contraception that can be used to prevent pregnancy after sexual intercourse. These are recommended for use within 5 days but are more effective the sooner they are used after the act of intercourse.

Mode of action: Emergency contraceptive pills prevent pregnancy by preventing or delaying ovulation and they do not induce an abortion. The copper-bearing IUD prevents fertilization by causing a chemical change in sperm and egg before they meet. Emergency contraception cannot interrupt an established pregnancy or harm a developing embryo.

Uses: When no contraceptive has been used. Sexual assault when the woman was not protected by an effective contraceptive method. When there is concern of possible contraceptive failure, from improper or incorrect use.

Methods of Emergency Contraception: The 4 methods of emergency contraception are:

- ECPs containing UPA
- ECPs containing LNG
- combined oral contraceptive pills
- copper-bearing intrauterine devices.

Emergency contraception pills (ECPs) and combined oral contraceptive pills (COCs): WHO recommends any of the following drugs for emergency contraception:

- ECPs with UPA, taken as a single dose of 30 mg;
- ECPs with LNG taken as a single dose of 1.5 mg, or alternatively, LNG taken in 2 doses of 0.75 mg each, 12 hours apart.
- COCs, taken as a split dose, one dose of 100 µg of ethinyl estradiol plus 0.50 mg of LNG, followed by a second dose of 100 µg of ethinyl estradiol plus 0.50 mg of LNG 12 hours later. (Yuzpe method)

Effectiveness: A meta-analysis of two studies showed that women who used ECPs with UPA had a pregnancy rate of 1.2%. Studies have shown that ECPs with LNG had a pregnancy rate of 1.2% to 2.1%. **Safety:** Side effects from the use of ECPs are nausea and vomiting, slight irregular vaginal bleeding, and fatigue. Side effects are usually mild. ECPs with LNG or with UPA are preferable to COCs because they cause less nausea and vomiting. Drugs used for emergency contraception do not harm future fertility. There is no delay in the return to fertility after taking ECPs. **Medical eligibility criteria:** There are no restrictions for the medical eligibility of who can use ECPs. Frequent use of emergency contraception can result in increased side-effects, such as menstrual irregularities, although their repeated use poses no known health risks.

Ulipristal Acetate: Ulipristal acetate is a medication used for emergency contraception and uterine fibroids. It

is a selective progesterone receptor modulator (SPRM). It is on the World Health Organization's List of Essential Medicines, the most effective and safe medicines needed in a health system. **Medical uses-Emergency contraception:** For emergency contraception, a 30 mg tablet is used within 120 hours (5 days) after an unprotected intercourse or contraceptive failure. It has been shown to prevent about 62–85% of expected pregnancies and prevents more pregnancies than emergency contraception with levonorgestrel. **Uterine fibroids:** Ulipristal acetate is used for pre-operative treatment of moderate to severe symptoms of uterine fibroids in adult women of reproductive age in a daily dose of a 5 mg tablet. If used for 13 weeks, it effectively controlled excessive bleeding due to uterine fibroids and reduced the size of the fibroids. Two intermittent 3-months treatment courses of ulipristal acetate 10 mg resulted in amenorrhea at the end of the first treatment course in 79.5%, at the end of the second course in 88.5% of subjects. Mean myoma volume reduction observed during the first treatment course (–41.9%) was maintained during the second one (–43.7%). After two to four 3-months courses of treatment, UPA-treated fibroids shown about -70% in volume reduction. This phenomenon was tentatively explained by the combination of multifactorial events involving control of proliferation of the tumor cells, induction of apoptosis and remodeling of the extracellular matrix. **Adverse effects:** Common side effects include nausea, abdominal pain, emesis, dysmenorrhea, pelvic pain, breast tenderness, headache, dizziness, mood swings, myalgia, and fatigue. **Contraindications:** Ulipristal acetate should not be taken by women with severe liver diseases, severe asthma receiving glucocorticoid treatment. It is embryotoxic in animal studies. Before taking the drug, a pregnancy must be excluded and contraindicated in breast feeding.

Copper-Bearing Intrauterine Devices: WHO recommends that a copper-bearing IUD, when used as an emergency contraceptive method, be inserted within 5 days of unprotected intercourse. This method is particularly appropriate for women who would like to start using a highly effective, long-acting, and reversible contraceptive method. **Effectiveness:** When inserted within 120 hours of unprotected intercourse, a copper-bearing IUD is more than 99% effective in preventing pregnancy. This is the most effective form of emergency contraception available. **Safety:** A copper-bearing IUD is a safe form of emergency contraception. It is estimated that there may be less than 2 cases of Pelvic Inflammatory Disease (PID) per 1000 users. The risks of expulsion or perforation are low.

WHO recommendations for provision of emergency contraception

All women and girls at risk of an unintended pregnancy have a right to access emergency contraception and these methods should be routinely included within all national family planning programmes. Moreover, emergency contraception should be integrated into health care services for populations most at risk of exposure to unprotected sex, including post-sexual assault care and services for women and girls living in emergency and humanitarian settings.

Progesterone Vaginal Ring (PVR) and SINO-IMPLANT (II)

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Progesterone vaginal ring (PVR)

The progesterone vaginal ring (PVR) has been devised to address the contraceptive needs of postpartum women, who have considerable unmet need especially during lactation. PVR is a new method of contraception during lactation that provides additional protection to breastfeeding women who want to space their pregnancies for more than one year, but may not comply with the strict criteria of LAM. "Women who breastfeed and are four or

more weeks postpartum can use the PVR without restrictions (MEC category 1)".

Progesterone vaginal rings are inserted in the vagina for continuous use for up to three months and replaced with a new ring if breastfeeding is continued and extended contraception is desired. Women can use these rings continuously for up to one year. Upon weaning of the breastfeeding infant, progesterone rings should be replaced with another effective method if continued contraception is desired.¹

It has 56 mm diameter and measures 9cm in cross-section. It functions by diffusing a continuous flow of approximately 10mg progesterone per day through the vaginal walls, which then enters the bloodstream and regulates the woman's fertility. Serum levels of progesterone measure 10-20 nmol/L in these women.

Mechanism of action

The contraceptive mechanism of action of natural progesterone is similar to that of progestin-only pills, i.e. it suppresses ovulation, and reinforces the prolactin response to suckling². PVR increases the sensitivity of the breast-hypothalamic-pituitary system to suckling, as shown by the higher PRL levels in women using the PVR, and reinforces the mechanism of lactational infertility. Progesterone may affect the GnRH-releasing process independently of suckling. These results, therefore, support the efficacy of the PVR in suppressing ovulation for a longer duration as compared with "untreated" women who demonstrate resumption of follicle growth and possible ovulation even when fully breastfeeding.² Progesterone also thickens the cervical mucus, inhibiting sperm penetration into the uterus.³

Efficacy

Clinical trials have shown a high contraceptive efficacy (over 98.5 percent) and a good safety profile. There have been some sideeffect reports of vaginal discharge, urinary discomfort, bleeding disturbances, and rare reproductive tract infections. In a Chilean study, less than 5 percent of users experienced any one of these side effects.³

Conclusion

The PVR is a new technology that increases contraceptive options for breastfeeding women and has the potential to improve the health of women and their infants. It is on the World Health Organization's List of Essential Medicines, the most effective and safe medicines needed in a health system.¹ The Guideline Development Group advised that women who use the PVR must be actively breastfeeding (e.g. at least four breastfeeding episodes per day) to maintain the efficacy of the method.⁴

SINO-IMPLANT (II)

Sino-implant (II) is a subdermal contraceptive implant. The implant is a set of two flexible, cylindrical rods made of medical-grade silicone elastomer. Each 2.5 × 43 mm capsule contains 75 mg LNG. Thin-walled silicone (silastic) tubing encases LNG embedded in a siloxane copolymer. The implant is inserted just under the skin of a woman's upper arm using a disposable trocar as the insertion instrument.⁵

It is a long-acting effective contraceptive method labelled for three years of use. Until removal is desired, no action from the user or routine clinical follow-up is required after initial insertion. WHO prequalified Sino-implant (II) on June 30, 2017.

After removal of the rods, there is no delay in a woman's return to fertility. Women who discontinue use of Sino-implant (II) can expect pregnancy rates that are comparable to those among women who are not using a contraceptive method.

Other trade names for the levonogestrel implant are Jadelle, Femplant, Trust, and Zarin.

Who can use Sino-implant II?

Almost all women of childbearing age can use Sino-implant II: women of any age (with or without children), women in the immediate postpartum period, breastfeeding mothers, HIV-positive women, women who smoke and women who have had a miscarriage or an abortion. It is ideal for women with limited access to health services because it does not require regular resupply from a provider. Implants do not protect against HIV or other sexually transmitted infections

Mechanism of action

It works by inhibiting or altering ovulation and thickening the cervical mucus, making it difficult for sperm to unite with an egg. Fertility returns immediately after removal of the implants.

Four randomized trials with a total of 15,943 women assigned to Sino-implant (II) had first-year probabilities of pregnancy ranging from 0.0% to 0.1%. The five-year cumulative probabilities of pregnancy from these trials ranged from 0.7% to 2.1%.⁶

Insertion- Sino-implant II is inserted into the inner side of either upper arm under local anaesthesia. The ideal time to insert Sino-implant (II) is within seven days after the onset of menstrual bleeding. If insertion is done at any other time, implants are not considered immediately effective and woman should use another contraceptive method. After an abortion, Sino-implant (II) can be inserted either immediately after the procedure or within seven days of the event without need for additional contraceptive protection.

Some medications (antiretrovirals, anticonvulsants (barbiturates, phenytoin, carbamazepine, oxcarbazepine, primidone, topiramate) and rifampicin.) may interfere with Sino-implant (II)'s effectiveness at preventing pregnancy. These women need to use condom use for additional protection.

Side effects include nausea, headaches, dizziness, weight loss or gain, abdominal discomfort, irregular menstruation, mood swings, pain or itching at the insertion site and breast tenderness.

Woman is required to consult the doctor if she has pus or bleeding at the insertion site, implants sticking out of the skin, heavy or prolonged vaginal bleeding (twice as much as usual menstrual bleeding or longer than eight days), severe pain in the lower abdomen, or migraine headaches (repeated severe headaches on one side of the head, accompanied by nausea, vomiting or sensitivity to light). Otherwise, follow-up visits are not required.

References

1. World Health Organization (WHO), Programming Strategies for Postpartum Family Planning, Geneva: WHO, 2013.
2. Diaz S, Miranda P, Brandeis A, Cardenas H, Croxatto HB. Mechanism of action of progesterone as contraceptive for lactating women. *Ann N Y Acad Sci* 1991;626:11-21.
3. Massai R, Miranda P, Valdes P, et al. Preregistration study on the safety and contraceptive efficacy of a progesterone-releasing vaginal ring in Chilean nursing women. *Contraception*. 1999;60(1):9-14.
4. Sivin I, Diaz S, Croxatto HB, Miranda P, Shaaban M, Sayed EH, et al. Contraceptives for lactating women: a comparative trial of a progesterone-releasing vaginal ring and the copper T 380A IUD. *Contraception* 1997;55:225-32
5. Lendvay A, Otieno-Masaba R, Azmat SK, Wheelless A, Hameed W, Shaikh BT, et al. Effectiveness, safety and acceptability of Sino-implant (II) during the first year of use: results from Kenya and Pakistan. *Contraception*. 2014; 89(3):197-203.
6. Steiner MJ, Lopez LM, Grimes DA, Cheng L, Shelton J, Trussell J et al. Sino-implant (II)--a levonorgestrel-releasing two-rod implant: systematic review of the randomized controlled trials. *Contraception*. 2010; 81(3):197-201.

Menstrual Moksha

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In the busy lifestyle of today's era, women are breaking out of the confines of home and constantly trying to carve a niche for themselves, proving their potential in all fields and redefining the definition of womanhood. What a working woman, or even a so-called-non-working-women dreads is an unannounced period, when she is in the middle of something important or an unplanned pregnancy when she is at the zenith of her career, and most of all, every single woman wants to cut down the hassle of the "monthly problem".

We will discuss here different options available that provide long term contraception and reduce the frequency of menstrual cycles, providing women with “menstrual moksha”, and these include implants, injectables, intra uterine devices and oral medications.

Implants: Implants include implanon and norplant, are subdermally placed sustain release systems containing hormone which is released steadily through a rate controlling membrane.

Norplant was the first developed contraceptive implant. It consists of 6 – 34 mm long, sustain release capsules, with silastic tubing containing a total of 216 mg of levonorgestrel, which is released at the rate of 85mcg/day in first month and gradually reduces to a stable 30mcg/day after 2 years. The implants remain active for as long as 9 years.

Implanon is a single flexible rod 4cm long, containing 68 mg of 3 keto desogestrel. It releases hormone at the rate of 67mcg/day in first month and reduces to 30 mcg/day after 2 years and is effective for 3 years.

These progesterone implants, maintain steady progesterone concentration, therefore preventing LH surge and ovulation.

Implants are a safe, highly effective(failure rate 0.01%-0.5%), continuous method of contraception that requires little user effort and rapidly reversible. Implants are an excellent choice for a breastfeeding woman and women with contra indication to estrogen use. There are no forgotten pills, broken condoms, lost diaphragms, or missed injections. Insertion and removal is done by trained doctor.

These implants alter menstrual pattern by reducing frequency of menstrual cycle and reducing the amount and duration of bleeding in each cycle. Although infrequent and reduced, the menstrual bleeding is unpredictable with implants, and amenorrhea always imposes an anxiety of failure and resultant pregnancy.

Injectables: injectable contraceptives include depot medroxyprogesterone acetate (DMPA) and NET EN.

DMPA: Depot-medroxyprogesterone acetate is formulated as microcrystals, suspended in an aqueous solution, given 150 mg intramuscularly (gluteal or deltoid) every 3 months.

Other options include norethindrone enanthate (NET-EN), 200 mg every 2 months.

Injection is given by Z track technique, and should not be massaged, and with proper use have a grace period of 2 weeks, allowing for late injections.

Initially causing irregular bleeding, these injections are associated with amenorrhea in more than 80% women after 5 years of use. Normal menstrual cycle and fertility return about 6 months after discontinuation of injections.

LNG-IUDs: The LNG-IUS (levonorgestrel-releasing intrauterine system, Mirena), is a T shaped device containing 52 mg of levonorgestrel in vertical arm and releases 20mcg of drug/day. Mirena is approved for 5 years, but lasts for 7 years. Mirena drastically reduces dysmenorrhea and blood loss and about half the women become amenorrheic by 1 year post insertion.

PILLS: Seasonale and Seasonique

Seasonale is combined oral contraceptives containing 0.15 mg of levonorgestrel and 0.03 mg of ethinyl estradiol (pink tablet) taken for 84 days continuously followed by 7 placebo pills(white tablets), the time during which menstruation occurs.

Seasonique has the same drug composition and comes as blue-green tablets, followed by 7 yellow tablets containing 0.01 mg ethinyl estradiol.

These pills provide excellent control over menstrual cycles and menstruation occurs once in 90 days, but of course comes with a daily chore of pill taking, and missing a pill is associated with chances of both pregnancy and irregular menstruation.

Since these pills contain estrogen, they increase risk of thromboembolic disorders and should be used cautiously in women at high risk of estrogenic side effects.

Synchronous with development in all other fields of science, the choices for women for contraception and/or menstrual cycle regulation is increasing day by day, offering varied options which the women can choose as per their convenience and preference. It gives women more control over their life and prevents unplanned pregnancies and “periodic” surprises!

Addressing and Rationalizing the Caesarean Section Rates

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Caesarean section rates are on a rise globally. The current CS rates range from 5% to over 50 % in some countries.¹ In Delhi a survey showed a CS rate of 53.8% in private and 23.7% in public institutions.² The Government of India has shown concern on this increase in CS rates which has been perceived by the medical fraternity as a threat to their autonomy. In 1985 WHO suggested that optimum CS rate is 10-15% as rates above this are not associated with any improvement in perinatal outcome.³ This is being contested currently on the grounds that over the years the patient profile has undergone a major change. Pregnant women are older, heavier and more sedentary. A large number are in professional jobs. Planned delivery is popular as both the pregnant women and their obstetricians prefer a timed delivery over an unplanned spontaneous labour. Caesarean on demand is on the rise due to ill perceived safety of caesarean birth over spontaneous delivery. Caesarean section is fast replacing normal vaginal delivery. The reasons for this increase are complex and intricate. These are attributed to factors such as changes in patient characteristics, professional practice style and fear of litigation. This trend is not healthy as it is adding significantly to the maternal morbidity in terms of morbidly adherent placenta, scar rupture and complications related to repeat surgery and also to perinatal morbidity.

There is an urgent need to address this problem and initiate steps to reduce the CS rate. The logical approach is to identify the factors contributing to this rise is through audits and discussions by various institutions and identify areas of focus and plan strategies to combat the identified factors. To begin with nulliparous term singleton caesareans can be focussed on by each institution as it is the CS rate in this category which shows a wide variation across institutions. Some of the contributing factors and the solutions to those are described as below.

Antepartum interventions such as mental and physical preparation of the pregnant women and her immediate family for normal vaginal delivery through group activities are important. The family members specially the husbands /partners should be involved. The pregnant women and their family members are informed about the advantages and disadvantages of vaginal delivery vs operative delivery and help them take an informed decision regarding the mode of delivery. Timed delivery through labour induction on unfavourable cervix is on a rise and should be avoided. Careful selection of patients for induction of labour where continuation of pregnancy is likely to harm the fetus or mother should be done. Prelabour ripening of unfavourable cervix also reduces the induction delivery interval and CS rates. Spontaneous onset of labour should be preferred as it reduces the overall time taken to delivery. Hospital admission in established labour should be encouraged to minimize the time spent in labour room.

Intrapartum interventions such as providing one to one support to the pregnant woman during labour by a companion, pain management, ambulation etc are effective in reducing CS rates. As dystocia and fetal distress are the commonest indications for CS in labour it is important to revisit the progress of labour, labour curves and duration in context with the newer guidelines given the changing characteristics of the pregnant women. Regular training workshops should be organized for labour room doctors nurses and other support staff. Regular audits of the CS rates and indications for CS should be conducted in every hospital whether public or private and CS without indications should be discussed and discouraged. There can be dash boards displaying the CS rates of each hospital.

Caesarean section for indications like cord around the neck, meconium stained liquor without any fetal heart rate changes etc should be discouraged. Vaginal birth after CS should be encouraged in suitable women especially those with a primary section for Breech presentation or fetal distress.

Caesareans should be performed for medical indications and should not be performed for the convenience

of either the pregnant woman or the doctor. There appears to be a need to sensitize both the public and the obstetricians to the adverse impact of this rising CS rates on the health of both the mothers and their babies and every effort should be made to reduce the rates to an acceptable rate. Professional societies should take the lead and make birthing a pleasurable and safe experience. Regular audits and discussions with a common goal to reduce the rates of primary CS rates is the way forward

References:

1. Betrán AP, Meriardi M, Lauer JA, Bing-Shun W, Thomas J, Van Look P, Wagner M. Rates of caesarean section: analysis of global, regional and national estimates. *Paediatr Perinat Epidemiol.* 2007 Mar 21(2) 98-113
2. Nagpal J et al Widespread non adherence to evidence based maternity care guidelines: a population based cluster randomized household survey. *BJOG* 2015; 122 (2):238-47.
3. World Health Organization. Appropriate technology for birth *Lancet.* 1985; 2 (8452):436-7

Current Thinking in Diagnosis and Management of Female Genital Tuberculosis

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Objective: To study diagnosis and management of female genital Tuberculosis

Materials and Methods: It was a prospective study funded by national TB Division, Ministry Of Health And Family Welfare, Government of India. Out of 1150 infertile women seen over 4 years in department of Obstetrics and Gynaecology, a total of 175 women found to have FG TB on clinical findings, laboratory investigations and endoscopy were enrolled in the study. Diagnosis was made by history taking examination, endometrial biopsy for AFB microscopy, culture, PCR, Gene Xpert (in selected cases), histopathological evidence of epithelioid granuloma, laparoscopy and hysteroscopic findings. All patients were given anti-tubercular therapy (ATT) under directly observed treatment short course (DOTS) under RNTCP free of cost.

Results: mean age was 28.4 years, mean body mass index was 22.4 ± 3.8 Kg/m². Main presenting features were primary infertility in 130 (74.4%), and secondary infertility in 45 (25.7%), menstrual dysfunction in 138 (78.8%). AFB on microscopy on endometrial biopsy were observed in 21 (12%), positive BACTEC culture was observed in 19 cases (10.8%) with positive Gene Xpert in 2 (1.1%) while positive PCR was seen in 166 cases (94.8%). Histopathological evidence of TB granuloma was observed in 31 (17.7%) cases. Various laparoscopic findings observed were abdominal and pelvic adhesions in 98 cases (56%), hydrosalpinx in 24 (13.7%), pyosalpinx in 6 (3.4%), tortuous tubes in 13 (7.4%), beaded tubes in 13 (7.4%), congested tubes in 13 (7.4%), tubo-ovarian mass in 23 (13.1%), shaggy areas in 30 (17.1%), tubercles in 64 (36.5%) cases. Tubal block was seen in 14 case (8%) on hysteroscopy, pale endometrium was seen in 54 cases (30.8%), shaggy areas in 27 (15.4%), tubercles in 25 (14.2%), while intra-uterine adhesions were seen in 59 (33.7%). All patients were given Category I ATT under DOTS with 168 (96%) cure rate. Most patients tolerated medicines well with over all side effects in 56 (32%) being nausea in 23 (13.1%), vomiting in 11 (6.2%), anorexia in 7 (4%), epigastric pain in 15 (8.5%). Severe side effects i.e. hepatitis was seen in only 3 cases (1.7%)

Conclusion: There is high incidence of FG TB in infertility patients which can be diagnosed by endometrial biopsy, AFB, culture and PCR on histopathology or laparoscopic or hysteroscopic findings. Directly observed treatment short course is an effective treatment for them.

Osteoporosis and Non Pharmacological Management

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Osteoporosis is a systemic disease characterised by the low bone mass density leading onto microarchitectural changes and decreases strength and fragility fractures.

- More than 200 million women worldwide have osteoporosis.
- Prevalence in India ranges from 25.8 to 62%
- It is a public health problem of high concern as now life expectancy is increasing to > 76 years and women have to live longer in menopause

Gyneocologist as first touch points at all stages of women's life have to diaganose, prevent and manage osteoporosis

Hall mark of osteoporosis is fractures and management is prevention of fractures .Incidence of fractures is 3 lac hip fractures, 2 lac vertebral fractures and lac wrist fractures which rob women of her quality of life and independence and can be cause of mortality in 25% of hip fracutues

“Ostoeoporosis is a disease of the adolescents manifested in Menopause”

Therefore it is preventable by timely intervention and attainment of Peak bone mass density in adolesxents

Even prolonged lactation is risk factor for development of post menopausal osteoporosis.

Peak bone mass density is the bone mass attained in the adolescents which is maintained at a plateu till about 35 years and then it starts decreasing at the rate of 1-2 % per year and this decrease increases to about 4-5% near menopause. This decreases is associated with parallel decrease in muscle mass and sarcopenia

Diagnosis is meaurment of BMD by Dual dexa scan and BMD is compared to young population of caucasian women. 1 to -1 is normal, -1 -2.5 is defined as osteopenia and beyond -2.5 is osteoporosis.

Factors which are responsible for attaining PBM are exercise, nutrition and attainment of Peak height.

Proper diet , calcium and Vit D are important factors along with exercise which has to be of high impact aerobics. There should be 3.5 times body weight while jumping and this is achieved by involving in high impact aerobics like badminton, volley ball, triple jumpers, skipping and long jumps. Walking gives impact of 1.5 times body weight and jogging 2.5 times body weight.Exercise once done for minimum of 100 impacts per day and for 6-7 months can have long time effect on bone mass density

Work at family level, institutional levels and at public health level is required to meet this aim of achieving Peak bone mass desnstiy

Diagnosis of osteoporosis is by Dual dexa Scan. Fracture risk assessment is by FRAX # Risk assessment too by WHO.

There are risk factors for falls and for reduces bone mass density which has to be taken into consideration for # risk assessment. Treatment is when Woman has BMD in the osteoporotic range or when she is osteopenic with risk factors or she already has had fracture

Once fracture occurs aim is to prevent second fracture

Fall prevention by various means is very important part of management of osteoporosis.Fall prevention is by balancing exercises , taichi, yoga , Vit D. use of protectors and using precautions in the house hold at outside,proper

eye sight examination and hearing aids and judicious use of drugs

Spinal fractures are most common and result in dowager hump and for that we need back strengthening exercises and no bending movements of the spine.

- Osteoporosis is a big public health problem
- It is preventable
- Prevention should start from early childhood
- Prevention of first # and then subsequent #
- Diet , calcium and Vit D have a role to play
- Exercise is a must
- Fall prevention is very important.

To Diagnose Osteoporosis -Think osteoporosis

Aim is to STAND TALL AND SUPPORT YOUR BONES so that our women are fit at forty , strong at sixty and independent at Eighty.

Delivery of Obstetric Critical Care- Where and How to begin?

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Maternal mortality is an important indicator of maternal health. There has been a substantial reduction in the maternal mortality rates, from 212 in 2007-09 to 167 deaths per 100,000 live births in 2011-13,¹ but India is still lagging behind the target of 140 deaths per 100,000 live births which was to be achieved by 2015 under the United Nations-mandated Millennium Development Goals (MDGs). This indicates that the improving institutional delivery rates have not resulted in proportionate reduction in these mortalities. This points out to the need of providing quality services in the Labor Rooms which are the most crucial areas, where early identification and quick response to a deteriorating pregnant can be life-saving. *Labor Rooms at every delivery point should be the focus area for providing high quality services during childbirth and hence the labor room becomes the initial point of delivery of obstetric critical care.*

Labor rooms should be standardized throughout the country. The Govt. of India released guidelines in 2016 explaining how to upgrade the Labor Rooms for standardization. The guidelines focus on five important areas which will help in imparting quality care to the patient:

1. Space and Lay out- to facilitate quality care to the patients
2. Equipment and accessories- All the labor rooms should have equipment and accessories with appropriate specifications and in adequate quantities, as per the recommendations which is an essential aspect to tackle any emergent situation^{2,3}
3. Consumables- should be available in adequate quantities in the labor room.
4. Human resources- All the labor rooms should have human resources in adequate numbers strictly as per recommendations². HR posted in Labor rooms should not be rotated outside the labor rooms
5. Practice and Protocols-

A. Triageing Every client coming to the institution for delivery should be triaged into two categories by the examining obstetrician—category 1 (Low risk cases) which can undergo a normal delivery by skilled birth attendants and category 2 (High Risk cases) in which regular care by an obstetrician is needed. The institutions where there is an HDU, category 2 cases should be managed there and category 1 cases should be delivered by the nurses in the labor rooms. In other institutions, the obstetrician should be available all the time for managing category 2 cases.

B. Labor Room Protocols; Labor Room protocols should be in place regarding entry to labor room for women in labor and staff working in labor room, protocol for safe care in the labor room. There should be display of all essential practice protocols e.g. AMTSL, Partograph, Essential Newborn care, hand washing etc

C. Essential Practices to be followed in Labor Rooms: The essential practices should be performed in all the delivery cases e.g. Measurement of BP & regular recording of maternal & fetal condition, plotting of partograph, AMTSL etc.

E. Assessing pregnant women requiring HDU/ICU care: A maternal early warning system (Modified Obstetric Early Warning System) to assess women requiring special care is being tested. This includes regular recording of variables like, pulse, systolic blood pressure, diastolic blood pressure, respiratory rate, temperature, oxygen saturation, mental status (AVPU) and urine output. These are recorded on a color coded chart and if 2 or more values are in the yellow zone or 1 value is in the red zone, it is a trigger to scale up the care. This system is envisaged to be especially useful for use at the primary and secondary care levels to enable early recognition of critical conditions needing tertiary care referrals.

F. Preparedness of Team to manage any complications and critical conditions which may occur in the LR. This can be achieved by development of protocols for all emergency conditions eg. PPH, eclampsia, maternal collapse; and skill training of all LR staff in identifying and managing these conditions.

Delivery of Obstetric Critical Care in the Obstetric HDU and ICU

In order to provide timely care to the pregnant women and reduce the number of preventable maternal deaths, skill based services in a dedicated unit with state-of-the-art equipment and technology and a team of appropriately trained professionals is the need of the hour

Obstetric Intensive care unit (ICU) It is an ICU which is dedicated to manage only obstetric patients having critical obstetrical or medical or surgical complications, managed by staff oriented for obstetric physiology and pathology. Conditions which necessitate admission include multi-organ involvement/failure that requires consultation and care to be provided by intensivist and super-specialists like nephrologist, pulmonologist, neurologist, cardiologist, etc.

High Dependency Unit: It is an area in a hospital, usually located closely to the intensive care unit, where patients can be cared for more extensively than on a normal ward, but not to the point of intensive care. Patients may be admitted to a HDU because they are at risk of requiring intensive care admission (step up), or at the same time, patients in the intensive care unit who have had an improvement in their condition require a stay in the HDU before being transferred to general ward (step down). It reduces the need of the ICU. The risk of getting hospital-acquired infection is less in the critical care unit compared to the ICU. It allows continuity of antenatal, intrapartum and postnatal care provided by the same team at the same place

It is suggested that to start with all District Hospitals should have Obstetric HDU and all the Medical Colleges should have an Obstetric HDU and an Intensive Care Unit.

Patients should be admitted to Obstetric ICU if patient is haemodynamically unstable; there is need for advanced respiratory support; inotropic support; or multi-organ failure.

HDU admission is warranted in women needing single organ support and those requiring close monitoring without need for mechanical ventilation.

The conditions that may require admission in HDU include obstetric complications and pregnancy with medical complications (Table 1)

Table 1: Conditions requiring HDU admission

Obstetric Complications	Pregnancy with Medical Complications
Pregnancy/Labor Pain with Severe Anemia	Pregnancy with Gestational Diabetes
Accidental Hemorrhage- Placental abruption	Pregnancy with Jaundice
Placenta Previa	Pregnancy with diabetic Ketoacidosis
Post Partum Hemorrhage	Pregnancy with Cardiac Diseases
Adherent Placenta and other placental abnormalities	Post-operative ARF and other renal problems
Obstetric hysterectomy	Pregnancy with Thyrotoxicosis/ Thyroid storm
Severe Preeclampsia/Hypertensive Crisis	Pregnancy with Pheochromocytoma/ other endocrinal crisis like Addison's disease etc
HELLP Syndrome	Pregnancy with complications of Malaria
Eclampsia	Leukemia and other hemolytic disorders
Broad ligament hematoma	Pregnancy with Dengue
Perforation during abortion	Pregnancy with Asthma and other respiratory problems
Sepsis & systemic inflammatory	Pregnancy with DIC
Response syndrome (SIRS)	Pregnancy with appendicectomy or any other surgical emergency
Pregnancy with Thrombophilias	Pregnancy with Trauma
Multiple gestation with complications	Pregnancy with Poisoning
Pregnancy with complications due to uterine anomaly and pathologies	Pregnancy with OHSS (Ovarian Hyperstimulation syndrome)
Hydatidiform Mole	Pregnancy with Cancer
Ruptured Ectopic	Burns during pregnancy
Postoperative patients requiring hemodynamic monitoring, or intensive nursing care	Pulmonary edema due to peri-operative fluid overload, CCF, complication of severe pre-eclampsia or tocolytic therapy with β -agonists etc.

Setting up Obstetric HDU & ICU

Issues important for setting up of an Obstetric ICU & HDU are⁴

1. Space and layout
2. Furniture, Equipment and accessories
3. Human resources
4. Practices and protocols

1. Space and layout

Obstetric HDU & ICU should be part of the maternity wing near the Labor Room and Operation Theatre for prompt shifting of patients, whenever required. It should also be in close proximity to essential support services (ICU, radiology, Laboratory, Blood Bank).

Number of Beds- The load in obstetric HDU depends on the number deliveries per month. The number of beds required for institutions with deliveries up to 250 is 4, with 250-500 deliveries is 8 and for more than 500 deliveries beds can be increased proportionately.

2. Furniture, Equipment and Accessories

Along with all routine equipment required in ward equipment must in HDU are:

- Suction equipment
- Oxygen supply
- Resuscitation equipment including ready access to defibrillator
- Pulse oximeter
- Non-invasive multiparameter monitor
- ECG waveform monitor
- Calf compression device
- Invasive haemodynamic monitoring
- Level 1 fluid infuser
- BIPAP

Transport Ventilator

Ultrasound machine with colour Doppler and echo facility

CTG machine

Cardiac monitor with CVP monitor

Baby resuscitation kit/cart

Crash cart fully loaded with BCLS medications;

CNS tray with torch, hammer, etc

Cautery machine

Defibrillator

Refrigerator with deep-freeze facility

X-ray view box

Eclampsia box

All emergency drugs

If possible O-ve blood

Partogram; input/output chart

Trays for procedures for putting central lines; ICD; catheters; etc

Stethoscope, B.P. Apparatus, Thermometer, Glucometer, Adult weighing scale, measuring tape, IV sets, Infusion Pump-1 per bed, Syringe Pump-1 per bed

The Obstetric ICU in addition should be equipped with ICU ventilators and invasive monitors.

3. Human Resources

Obstetrician is the head of HDU & Obstetric ICU

Staff Requirements-For 8 bedded HDU- 4 dedicated nursing staff and 2 EmOC/MOs should be present round the clock. For 4 bedded HDU, 2 dedicated nurses and 1 EmOC/MOs. For ICU there should be a critical care physician/anesthesiologist and the ratio of nurses to patients should be same.

Support staff needed include: pharmacist, dietician, counsellor, housekeeping and cleaning, security, data entry operator and electrical technician.

4. Practices and Protocols

Guidelines and protocols should be in place to encourage appropriate responses to critical situations and justify actions that are sufficient and efficient, neither excessive nor deficient. SOPs for all these protocols e.g Admission and discharge criteria to/from the HDU, Resuscitation of the pregnant patient, etc. be should be clearly laid down in consultation with experts. In addition, protocols for specific obstetric conditions need to be followed as per its standard treatment protocol.

These should be prominently displayed for ready reference of the medical personnel.

Documentation

Patient's case record must contain the following: • Proper history – It should be clear, legible and accurate. • Probable or confirmed diagnosis • Laboratory and imaging findings • Operative note • Operative findings • Management summary • Must include: date, time and signature • Explaining the conditions of the patients to the birth attendants/relative and getting it documented into the case sheets • Getting the consent of the patient for any procedure and for blood transfusions and getting it documented into the case sheets

To summarize, Labor room, Obstetric HDU and ICUs are areas for delivery of obstetric critical care. These areas should be well equipped to deal with obstetric emergencies and the staff posted here should be well versed with all the protocols and guidelines related to delivery of obstetric care

References

1. Special Bulletin on maternal Mortality in Lancet, May-2010-12
2. Maternal and Newborn Health Tool Kit 2013 http://cghealth.nic.in/ehealth/2014/RMNCH_A/2Maternal_Newborn_Health_Toolkit.pdf
3. Guidelines for Standardization of Labour Rooms at delivery points 2016 [http://nhm.gov.in/images/pdf/programmes/maternal-health/guidelines/Labor_Room% 20 Guideline](http://nhm.gov.in/images/pdf/programmes/maternal-health/guidelines/Labor_Room%20Guideline).
4. Guidelines for Obstetric HDU & ICU, March 2016, MOHFW, GOI

Pregnancy following Bariatric Surgery

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Incidence of Obesity in adult women is increasing world over with 1/3rd to 1/4th women of USA, Europe, Canada being obese. In India overall 16% of females are obese and in A.P. 22.7% are obese.

Pregnancy in obese women may be complicated by HTN, Pre Eclampsia, Gestational Diabetes, Thrombophlebitis, Dermatological problems. Post dated pregnancy, labour abnormalities and caesarean delivery and operative complications are higher in these women.

Problems during labour involve in providing pain relief procedures, position, operative delivery, shoulder dystocia and management of third stage of labour.

There is a 2 to 3 fold increase in abdominal delivery with additional problems like difficulty in anesthesia, during surgery and post operative complications like DVT and wound infection.

Pre-conception counselling, life style modifications including behavioral therapy dietary measures and anti-obesity pharmacotherapy are offered. Bariatric surgery is considered when other measures fail and the patients BMI is 35-40 kg/m² or greater.

Sleeve gastrectomy is the most common surgery done in these women in reproductive age group. It is a restrictive procedure with less malabsorption.

Initial 12 months after surgery is the period of rapid weight loss due to active catabolic state. Weight loss resolves issues of anovulation, menstrual irregularity and ameliorates PCOs linked symptoms. In addition pregnancy problem like GDM, LGA babies is reduced.

We present a series of Post bariatric surgery pregnancies managed at Hyderabad and their pregnancy outcome.

Oligohydramnios

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Introduction: Oligohydramnios refers to amniotic fluid volume that is less than expected for gestational age. It is typically diagnosed by ultrasound examination and may be described qualitatively (eg, normal, reduced) or quantitatively (eg, amniotic fluid index [AFI] ≤ 5).

An adequate volume of amniotic fluid is critical to allow normal fetal movement and growth, and to cushion

the fetus and umbilical cord. Oligohydramnios may inhibit these processes and can lead to fetal deformation, umbilical cord compression, and death.

Incidence: Reported rates of oligohydramnios are influenced by variations in diagnostic criteria, the population studied (low or high risk, screening or indicated ultrasound examination), the threshold used, and the gestational age at the time of the ultrasound examination (preterm, term, or postterm).

A study of 3050 uncomplicated pregnancies with singleton non-anomalous fetuses between 40 and 41.6 weeks of gestation noted oligohydramnios (defined as AFI \leq 5 cm) in 11 percent

Pathophysiology: The volume of amniotic fluid is ultimately determined by the volume of fluid flowing into and out of the amniotic sac. Fetal urination, lung fluid, and swallowing all make important contributions to fluid movement in late gestation, with minimal contributions from other sources. Fetal disorders that affect any of these processes will affect the amniotic fluid volume. As an example, growth restricted fetuses may redistribute blood flow away from their kidneys, which decreases fetal urine production, resulting in oligohydramnios.

Homeostatic mechanisms, such as intramembranous absorption (transfer of amniotic fluid across the amnion into the fetal circulation), also exist and work to maintain amniotic fluid volume. These mechanisms appear to be more successful in limiting excess fluid volume than in preventing reduced fluid volume. As an example, only half of fetuses with esophageal atresia, and two-thirds of fetuses with duodenal or proximal jejunal atresia develop polyhydramnios.

Etiology: The most likely etiologies of oligohydramnios vary according to severity and the trimester in which they are diagnosed. The majority of women with oligohydramnios or borderline/low normal amniotic fluid volume have no identifiable cause.

First trimester: The etiology of first trimester oligohydramnios is often unclear. Reduced amniotic fluid prior to 10 weeks of gestation is rare because gestational sac fluid is primarily derived from the fetal surface of the placenta, transamniotic flow from the maternal compartment, and secretions from the surface of the body of the embryo.

Criteria suggested for determining reduced amniotic fluid at this gestational age have included a difference between mean gestational sac size (MGSS) and crown-rump length of less than 5 mm or a mean gestational sac diameter/crown-rump length ratio outside the normal range for gestational age. This finding has been associated with poor outcome in selected populations

Second trimester: By the beginning of the second trimester, fetal urine begins to enter the amniotic sac and the fetus begins to swallow amniotic fluid. Therefore, disorders related to the fetal renal/urinary system begin to play a prominent role in the etiology of oligohydramnios. Maternal and placental factors, as well as rupture of the fetal membranes, are also common causes of oligohydramnios in the second trimester.

The etiologies and relative frequencies of midtrimester oligohydramnios were illustrated in a series of 128 fetuses first noted to have severe oligohydramnios/anhydramnios at 13 to 24 weeks of gestation [Shipp TD et al 1996]. The following etiologies were observed: fetal anomaly (51 percent), preterm premature rupture of membranes (PPROM) (34 percent), placental abruption (7 percent), fetal growth restriction (FGR) (5 percent), and unknown (4 percent). Six of the 65 anomalous fetuses were aneuploid. The pregnancy outcome was generally poor due to fetal or neonatal death or pregnancy termination.

An elevated maternal serum alpha fetoprotein (MSAFP) concentration has also been linked to second trimester oligohydramnios, with or without an anomalous fetus. This combination (elevated MSAFP, decreased amniotic fluid volume) carries an extremely poor prognosis: fetal growth restriction, fetal death, preterm delivery, neonatal death.

Second trimester oligohydramnios related to amniocentesis appears to have a better prognosis. The membranes often "re-seal" with reaccumulation of amniotic fluid and normal pregnancy outcome. There are a few reports of the occurrence and outcome of oligohydramnios after chorionic villus sampling.

Third trimester: Oligohydramnios first diagnosed in the third trimester is often associated with PPRM or with uteroplacental insufficiency due to conditions such as preeclampsia or other maternal vascular diseases. Oligohydramnios frequently accompanies fetal growth restriction related to uteroplacental insufficiency. Fetal anomalies and abruptio placentae also play a role at this gestational age. Amniotic fluid volume normally

decreases postterm and oligohydramnios can develop in these pregnancies. In addition, many cases of third trimester oligohydramnios are idiopathic.

Mechanisms of isolated oligohydramnios also may include alterations in the expression of water pores (aquaporin 1, aquaporin 3) in fetal membranes and placenta.

Clinical Manifestations and Diagnosis

There are both objective and subjective ultrasound criteria for oligohydramnios. Although use of an objective criterion is generally preferable (amniotic fluid index ≤ 5 ; single deepest pocket < 2 cm), subjective suspicion of amniotic fluid volume by experienced examiners has similar sensitivity for diagnosing reduced amniotic fluid volume confirmed by the dye-dilution method, the gold standard for quantifying volume. The AFI provides a means of quantifying normal and abnormal fluid volumes and comparing assessments of amniotic fluid volumes across gestation. As the 5th percentile for AFI averages approximately 7 cm throughout gestation, an AFI ≤ 5 cm is greater than two standard deviations below the mean value. Most studies that found significant morbidity associated with oligohydramnios used an AFI ≤ 5 cm as the cutoff, rather than the percentile for gestational age, since the AFI remains relatively stable between 22 to 39 weeks of gestation using the AFI cutoff ≤ 5 cm rather than using the 5th percentile is more clinically relevant for the diagnosis of oligohydramnios, and represents a volume that may require further assessment and/or clinical intervention. We use the term borderline/low normal amniotic fluid volume to describe pregnancies with AFI > 5.0 and ≤ 8.0 cm. A single deepest pocket (SDP) < 2 cm can also be used as an objective criterion for oligohydramnios. A randomized trial (SAFE) comparing AFI and SDP for prediction of adverse pregnancy outcome at term in low- and high-risk pregnancies found that use of AFI increased the frequency of diagnosis of oligohydramnios and labor induction but did not improve perinatal outcome compared with SDP [Kehl S 2016].

Anhydramnios can be defined as the lack of a measurable AFI or SDP, although a thin echolucent rim may be imaged on the inner aspect of the uterus.

Multiple gestation: Measurement of AFI for each sac of a multiple gestation is difficult so single deepest vertical pocket is used for diagnosis of oligohydramnios. In a twin gestation, a value ≤ 2 cm suggests the amniotic fluid volume is $< 2.5^{\text{th}}$ percentile and is generally accepted as diagnostic of oligohydramnios, this is the same vertical pocket threshold used in singletons.

Approach: Maternal history and physical examination and a comprehensive sonographic evaluation are recommended for all pregnancies with oligohydramnios. Use of additional tests (eg, karyotype, instillation of dye) depends upon individual clinical circumstances. There is no effective long-term treatment of oligohydramnios. In idiopathic oligohydramnios, maternal treatment with intravenous isotonic solution, oral hydration, or amnioinfusion can lead to short-term improvement. These procedures may be useful under certain circumstances, such as to facilitate diagnostic ultrasound evaluation when the fetal anatomic survey is suboptimal. Reduced amniotic fluid in the first trimester appears to be an ominous finding. Counsel these patients regarding the poor prognosis, discuss the signs of miscarriage, and follow the pregnancy with serial ultrasound examinations to determine its course.

The prognosis and management of second trimester oligohydramnios depend upon the underlying etiology and severity of oligohydramnios. Pregnancies with borderline/low normal amniotic fluid volume generally have a good prognosis. Anhydramnios diagnosed at this time may induce anatomical and functional fetal abnormalities and often results in fetal or neonatal death. Perform a fetal structural survey to rule out a fetal malformation since serious abnormalities may influence future management. Serial sonographic examinations to monitor amniotic fluid volume, fetal growth, and fetal well-being are performed until delivery.

Some studies have shown an inverse relationship between amniotic fluid volume in the third trimester and the incidence of adverse pregnancy outcome. Adverse outcomes are related to umbilical cord compression, uteroplacental insufficiency, and meconium aspiration. Given the potential high risk of adverse outcome, we perform a nonstress test (NST) and AFI (or biophysical profile) once or twice weekly until delivery. For women with idiopathic oligohydramnios, we suggest delivery at 37 to 38 completed weeks of gestation rather than expectant management [grade 2C]. Although induction of an unfavorable cervix may increase the risk of cesarean delivery, there is insufficient evidence to assure us that perinatal outcome with continued conservative management of oligohydramnios at term is comparable to that with delivery.

Pre Implantation Genetic Screening- Current Scenario

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It is now proven by various studies that more than 50% of cleavage stage embryos are chromosomally abnormal and the incidence increases as the age advances. It is also a known fact that there is a high prevalence of chromosomal abnormalities is spontaneous abortion & repeated IVF failures.

PGS & PGD are highly advanced diagnostic modalities which is increasingly offered to recurrent aborters and Recurrent implantation failures in IVF program.

It helps is negative selection of affected embryos & to select euploid embryos to improve out come in high risk group however its use to improve conception rate in standard IVF program remains debatable.

Primary aim of PGS is to select euploid embryos prior to implantation while PGD aims at identifying the disease free embryos in high risk groups. Both technique are highly advanced techniques and require IVF as prerequisite. Common anomalies are trisomy- 21, 18, 13 & 21 & other translocations & Deletions which can be easily identified by PGS while there are more than 300 monogenic disorders/ sex linked disorders which can be identified by PGD before implantations.

Since 1st introduction to technique in 1990, the technology has evolved a lot & most of advances have come in processing the biopsy material rather than biopsy technique. Biopsy can be done at polar body stage/ cleavage stage or blastocyst stage. All stage do have their limitation & advantages. But the common is cleavage stage biopsy at it allows transfer in same cycle. Various method for biopsy are using acid Tyrode solution or laser technology which is now universally used because of ease & safety. The biopsied cell is immediately fixed & processed by either FISH, microarray or more advanced NGS technology while for monogence disorders, PCR technology is used.

In spite of these advances the technology have its share of limitations & ethical issues like false -ve & false +ve leading to possibilities of accepting of an abnormal embryo or deselection of a normal embryos. Misuse of technology for gender selection is a major concern. Especially in Indian setting & need strict regulation to avoid misuse. another limitation is high cost limiting the application to selected few. Debate for routing use of PGS to improve implantation rate continues & at present the technology to be offered for diagnostics indications like recurrent implantation failures/ recurrent abortions advance age & high risk groups.

Ovarian Aging: Can it be stopped?

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Ovarian aging is characterized by both a reduction in egg quality and a drastic reduction in the number of ovarian follicles. The issue of ovarian aging and its associated effects on fertility has received greater attention as an increasing number of women in modern society choose to postpone the age at which they bear children. In addition, cancer-related mortality rates are decreasing due to advances in more effective treatments, but this has led to an increase in non-physiological ovarian aging because these treatments can adversely affect germ cell survival and cause premature ovarian failure (POF) and infertility¹

It has been generally accepted for 60 years that a fixed population of primordial follicles is established in the ovaries during early life, and in most mammalian species, oocytes cannot renew themselves in postnatal or adult life. This dogma, however, has been challenged over the past decade. Resources in the ovary might be more reliable and promising source tools for combating ovarian aging.

Endocrine changes mainly relate to the decline in the negative feedback from ovarian factors at the hypothalamo-pituitary unit. The declining cohort of antral follicles with age first results in gradually elevated FSH levels, followed by subsequent stages of overt cycle irregularity. The gradual decline in the size of the antral follicle cohort is best represented by decreasing levels of anti-Mullerian hormone.

The normal process of reproductive aging varies considerably among women. This implies that some women remain highly fertile until the fifth decade of life, whereas others face the loss of natural fertility already in their mid-thirties. Female reproductive aging seems to be largely based on age-related changes in ovarian function. Decreasing numbers of follicles, coinciding with diminished oocyte quality, dictate the gradual changes in menstrual cycle regularity and monthly fecundity. The mechanisms behind the observed gradual decline of the follicle pool and the reduced oocyte quality are far from being fully understood, although recent knowledge regarding the endocrine, paracrine, genetic, and metabolic factors involved has led to a better understanding of this extremely complex problem.

As menopause and the preceding decline in oocyte quality seem to have a fixed time interval, tests that predict the age at menopause may be useful to assess individual reproductive lifespan. Genetic studies have identified several interesting loci of small genetic variation that may determine fetal follicle pool development and subsequent wastage of this pool over time. Improved knowledge of the ovarian ageing mechanisms may ultimately provide tools for prediction of menopause and manipulation of the early steps of folliculogenesis for the purpose of contraception and fertility lifespan extension.

Both the premature and age-induced ovarian failure are associated with significant medical and quality of life complications. The prevailing dogma dictates that the primordial follicle reserve is fixed *in utero* and any insult reducing such reserve causes irreversible harm as oocyte regeneration is not possible in postnatal life. This dogma has been seriously challenged by several independent laboratories in recent years.^{2,3} While there has not been direct laboratory evidence in humans supporting or refuting the concept of germ cell renewal, certain observations lend support to the existence of oocyte regeneration in human ovaries.⁴

In a cancer patients who became menopausal as a result of intense chemotherapy, it was observed that transplantation of previously frozen ovarian cortical strips under the abdominal skin resulted in immediate reversal of menopause and four spontaneous pregnancies with three live births.⁴ This appeared to be the result of the activation of the remaining menopausal ovary in response to the transplantation of undamaged ovary

under the skin. It is speculated that chemotherapy is likely to damage the ovarian germ cell niche, resulting in the inability of the ovary to regenerate new oocytes.⁵ Transplanted ovary may provide the necessary regenerative signals from its niche to the preexisting ovary through the circulation, enabling the chemotherapy-damaged ovary to reinitiate oocyte generation. Niikura *et al* indicated that external factors in circulation can affect ovarian niche to reinstate oocyte production in the aging ovary.⁶ Androgens may have a role in the oocyte regenerative effect that Niikura *et al* observed. As the androgen levels drop in the senescing mice, regenerative effects of androgens on germ cells become predominant, resulting in overall increase in primordial follicle reserve. DHEAS, a weak androgen, is associated with improved ovarian response to fertility drugs and enhanced ovarian reserve in aging women.⁷

Regulatory T (Treg) cells play a key role in the regulation of autoimmunity and transplantation. Human placenta-derived mesenchymal stem cell (hPMSC) transplantation has a potential to restore ovarian dysfunction associated with premature ovarian failure (POF), while the exact function of the Treg cells in the transplantation still needs to be further investigated.⁸

Chemotherapy can cause early menopause or infertility in women and have a profound negative impact on the quality of life of young female cancer survivors. Various factors are known to influence the risk of chemotherapy-induced ovarian failure, including the drug dose and treatment duration; however, the scheduling of dose administration has not yet been evaluated as an independent risk factor. It was hypothesized that low-dose metronomic (LDM) chemotherapy scheduling would be less detrimental to ovarian function than the traditional maximum tolerated dose (MTD) strategy.⁹ In vitro, MTD cyclophosphamide exposure resulted in decreased proliferation and increased granulosa cell apoptosis, while cells treated with LDM cyclophosphamide were not different from untreated controls. Treatments of MTD cyclophosphamide induced high levels of follicle atresia and enhanced follicle recruitment in mice. In contrast, LDM delivery of an equivalent dose of cyclophosphamide reduced growing follicle numbers, but was not associated with higher levels of follicle atresia or recruitment. MTD cyclophosphamide induced significant vascular disruption and DNA damage in vivo, while LDM chemotherapy with equal cumulative amounts of cyclophosphamide was not different from controls. It is suggested that LDM scheduling could potentially minimize the long-term effects of cyclophosphamide on female fertility by preventing follicle depletion from enhanced activation.⁹

The use of GnRHa to suppress ovarian function and therefore to reduce ovarian damage caused by gonadotoxic chemotherapy agents has been investigated. Primordial germ cells in resting follicles could be more resistant to gonadotoxic chemotherapy than germ cells in growing follicles.

Suppression of the pituitary-ovarian axis and prevention of the increased recruitment of primordial follicles by the increased FSH concentration induced through the apoptosis of growing follicles is one of the proposed mechanisms of gonadal protection. Additional mechanisms of protection have been proposed, such as decreased in utero-ovarian perfusion, activation of GnRHa receptors on ovary with decrease in apoptosis, and upregulation of an intragonadal antiapoptotic molecule such as shingosine-1-phosphate (S1P).¹⁰ However its protective effect is still debated.

A new frontier in the field of fertility preservation: manipulation of ovarian aging is opening up. The next era in fertility preservation research will be focusing on the pharmacological and genetic modifications in both slowing down oocyte attrition and enabling a healthier ovarian niche. This will carry the aim to not only enrich the primordial follicle pool but also reverse age-induced alterations in oocyte quality and possibly curb age-related infertility and pregnancy losses.¹¹ The fixed primordial follicles pool theory, which monopolized reproductive medicine for more than one hundred years, has been broken by the discovery, successful isolation and establishment of ovarian stem cells. It has brought more hope than ever of increasing the size of primordial follicle pool, improving ovarian function and delaying ovarian senescence. Traditional view holds that stem cell aging contributes to the senility of body and organs. However, in the process of ovarian aging, the main factor leading to the decline of the reproductive function is the aging and degradation of ovarian stem cell nests, rather than the senescence of ovarian germ cells themselves. Recent studies have found that the immune system and circulatory system are involved in the formation of ovarian germline stem cell niches, as well as regulating the proliferation and differentiation of ovarian germline stem cells through cellular and hormonal signals. Therefore, we can improve ovarian function and delay ovarian aging by improving the immune system and circulatory system, through diet, exercise and other life style changes, which can indirectly provide a suitable micro-environment for aging ovaries.

This will provide an updated program for the treatment of premature ovarian failure (POF) and infertility.¹⁰ The ovarian germ stem cells can remain active and continue to replenish the follicle pool. These measures can delay the female genital aging and relieve the symptoms associated with perimenopausal ovarian aging and other related senile diseases.

References

1. Jeruss JS Woodruff TK Preservation of fertility in patients with cancer. *New England Journal of Medicine* 2009; 360 902–911.
2. Johnson J. et al Oocyte generation in adult mammalian ovaries by putative germ cells in bone marrow and peripheral blood. *Cell*. 2005 Jul 29; 122(2):303-15.
3. Zou K et al Production of offspring from a germline stem cell line derived from neonatal ovaries. *Nat Cell Biol*. 2009 May; 11(5):631-6.
4. Oktay K, Türkçüoğlu I, Rodriguez-Wallberg KA. Four spontaneous pregnancies and three live births following subcutaneous transplantation of frozen banked ovarian tissue: what is the explanation? *Fertil Steril*. 2011 Feb; 95(2):804.e7-10
5. Oktem O, Oktay K Quantitative assessment of the impact of chemotherapy on ovarian follicle reserve and stromal function. *Cancer*. 2007 Nov 15; 110(10):2222-9
6. Niikura Y, Niikura T, Tilly JL Aged mouse ovaries possess rare premeiotic germ cells that can generate oocytes following transplantation into a young host environment. *Aging (Albany NY)*. 2009 Dec 12; 1(12):971-8.
7. Sönmezer M, Cil AP, Oktay K Ongoing pregnancies from early retrieval of prematurely developing antral follicles after DHEA supplementation. *Reprod Biomed Online*. 2009 Dec; 19(6):816-9.
8. Yin N, Zhao W, Luo Q, Yuan W, Luan X, Zhang H Restoring Ovarian Function With Human Placenta-Derived Mesenchymal Stem Cells in Autoimmune-Induced Premature Ovarian Failure Mice Mediated by Treg Cells and Associated Cytokines. *Reprod Sci*. 2017 Jan 1:1933719117732156. doi: 10.1177. [Epub ahead of print]
9. Dynes J, Osz K, Hooper A, Petrik J Low-dose metronomic delivery of cyclophosphamide is less detrimental to granulosa cell viability, ovarian function, and fertility than maximum tolerated dose delivery in the mouse. *Biol Reprod*. 2017 Sep 1;97(3): 449-465
10. Bedoschi G. et al Utility of GnRH-agonists for Fertility Preservation in Women With Operable Breast Cancer: Is It Protective? *Curr Breast Cancer Rep*. 2013 Dec 1; 5(4): 302–308.
11. Ye H et al Ovarian Stem Cell Nests in Reproduction and Ovarian Aging. *Cell Physiol Biochem*. 2017 Oct 20;43(5):1917-1925.

Retrograde Hysterectomy for Placenta Praevia/Accreta

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Placenta accreta is considered a severe complication of pregnancy and may be associated with massive and potentially life-threatening intrapartum and postpartum haemorrhage. With increasing caesarean section rates, the incidence of placenta previa and accreta / percreta has shown a significant increase.

Placenta previa without previous uterine surgery is associated with a 1–5% risk of placenta accreta. The authors of one study found that in the presence of a placenta previa, the risk of placenta accreta was 3%, 11%, 40%, 61%, and 67% for the first, second, third, fourth, and fifth or greater repeat cesarean deliveries, respectively¹. The bladder is most frequently involved extrauterine organ in placenta percreta, more so in previous LSCS with anterior placenta previa and is associated with substantial morbidity and mortality.

Almost all women with placenta accreta require blood transfusion and it remains the leading indication for

caesarean hysterectomy, which should be performed in a safe and expeditious manner. Traditional surgical approaches are associated with a risk of major haemorrhage; therefore, a retrograde hysterectomy was proposed from the pouch of Douglas which allows control of the bleeding and maximum separation of the bladder from the uterus before any excisional procedure begins.^{2,3}

The major factors in reducing morbidity/mortality from placenta accrete during surgery are-

- Early diagnosis of placenta praevia and accreta
- Referral to a center well equipped to tackle these cases with availability of urologists, blood bank, nursery and experienced obstetric surgeons
- Elective operation with high risk consent for hysterectomy, bladder resection, ureteroneocystostomy and Intensive care requirement
- Placental mapping should be done to plan incision of uterus
- Prior arrangement of blood and blood products
- Placement of uterine artery balloon catheters if available

Summary of Procedure

- The woman is placed in the semi-lithotomy position
- Abdomen is opened by vertical incision extending well above umbilicus, so as to reach upper segment of uterus and the caesarean is performed by fundal hysterotomy away from the placenta.
- The ligated umbilical cord and attached placenta are left within the uterus and the hysterotomy is closed with a continuous suture (for haemostasis).
- The uterus is exteriorised and kept under upward traction so that uterine vascular constriction can diminish blood loss. Direct handling or dissection at the placental site is avoided.
- The round ligaments are divided and ligated, and the broad ligaments are incised laterally and parallel to the infundibulo-pelvic ligaments to expose the retroperitoneum. The loose areolar tissue encountered in this space is carefully dissected parallel to the ureters and the pelvic sidewall vessels.
- Next, the utero-ovarian ligaments and tubes are divided and ligated
- Ligation of the anterior divisions of the internal iliac arteries. This greatly reduces the pulse pressure and transforms the pelvic arterial system into a venous-like system, with slow and sluggish blood flow. If the surgeon is not experienced with this procedure, it may add time and morbidity. The posterior approach could be used without performing internal iliac artery ligation.
- The posterior vaginal fornix is exposed by placement of a sponge stick into the vagina, which is opened transversely, 1–2 cm below the cervicovaginal junction.
- Hysterectomy clamps are used to circumscribe the vagina, sequentially dividing and securing each pedicle (uterosacral and posterior vagina) always keeping the ureters carefully identified, dissected and preserved through the anterior bladder pillar in order to keep them out of the field of dissection.
- The anterior lip of cervix is held by Allis forceps and pulled up posteriorly and uterus is pulled upwards and to one side. This exposes the remaining cardinal ligament attachments (with uterine vessels) medial to the ureters and bladder pillars, which are sequentially divided by clamps and secured with suture ligatures.
- The vesicouterine space is developed cephalad by blunt dissection until the bladder is completely detached from the anterior aspect of the uterus or the lowermost extent of bladder invasion (usually above the trigone level) has been reached. If the bladder is involved, cephalad blunt dissection of the bladder is stopped. Cystotomy is particularly helpful for defining the dissection planes and determining whether resection of the posterior bladder wall is required. The extent and type of reconstruction may require simple closure of the bladder defect or ureteroneocystostomy followed by bladder repair.
- Vaginal cuff is closed. Haemostasis secured, drains put in and abdomen closed in usual manner.

Discussion

In the presence of anterior placenta praevia/accreta the lower uterine segment is commonly enlarged and hypervascularised, with the distorted anatomy and oedema of the surrounding structures making the cervicovaginal junction difficult to identify. Using retrograde approach, the posterior vaginal fornix at the pouch

of Douglas is opened by placement of a sponge stick into the vagina and the bladder is dissected well below the space where it is likely to be adherent or invaded (specially at previous scar site). Therefore the most vascular area of bladder invasion is not touched till all vascular supply is closed, consequently blood loss is rapidly diminished. This technique provides safer surgery for women with anterior placenta praevia/accreta.

References

1. Silver RM, Landon MB, Rouse DJ, Leveno KJ, Spong CY, Thom EA, et al. Maternal morbidity associated with multiple repeat cesarean deliveries. National Institute of Child Health and Human Development Maternal-Fetal Medicine Units Network. *Obstet Gynecol* 2006;107:1226–32.
2. Selman AE (2016) Caesarean hysterectomy for placenta praevia/accreta using an approach via the pouch of Douglas. *BJOG* 123(5): 815-819.
3. Hiroshi S, Nao T, Saeko I, Kanako K, Takako S, et al. (2016) Modified retrograde cesarean hysterectomy for placenta previa accreta. *J Case Rep Images Gynecol Obstet* 2: 25-30.

Laser Ablation in Twin Twin Transfusion Syndrome (TTTS)

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TTTS can occur in 10 to 15% of monochorionic pregnancies. The diagnosis is made on ultrasound and staging is done using the Quintero criteria (table).¹ This classification does not represent a continuum of disease progression but it does have some prognostic significance.

Quintero Classification for Twin twin transfusion syndrome ¹	
Stage I	Discordant amniotic fluid in the two sacs of structurally normal fetuses (oligohydramnios defined as DVP < 2 cm; polyhydramnios defined as DVP > 8 cm or > 10 cm at < 20 or > 20 week respectively) Donor bladder visible
Stage II	Donor bladder not visible
Stage III	Doppler abnormalities in umbilical artery or ductus venosus in either twin
Stage IV	Fetal hydrops in either twin
Stage V	Intrauterine demise of either twin

Stage I TTTS should be followed up with ultrasound surveillance as majority will remain stable or even resolve. Stage II and above diagnosed before 26 weeks must be offered treatment. Atypical presentation wherein there are Doppler abnormalities but fetal bladder is still seen should also be considered 'severe' and offered treatment.

Till the 1990s, *serial amnioreduction* was considered standard treatment for TTTS. Although it does reduce maternal symptoms of polyhydramnios, the perinatal outcomes are poor with survival rates ranging from 37% to 60%.² Of more concern is the high risk of neurological damage in upto 50% of survivors.³ De Lia was the first to report Laser ablation of anastomosing vessels but the Eurofetus trial published in 2004 established Selective Laser Coagulation of Placental Vessels (SLCPV) as the standard of care in TTTS with significantly higher twin survival rates and significantly lower neurological morbidity in surviving twin(s).³ Although the National Institute of Child Health and Human Development (NIHCD) trial⁴ had conflicting results as compared to the Eurofetus trial, the revised Cochrane review⁵ in 2014 states that endoscopic laser coagulation of anastomosing vessels should continue to be considered in the treatment of TTTS to improve neurodevelopmental outcomes. Thus, TTTS presenting between 16 to 26 weeks of gestation should be treated by fetoscopic laser ablation

rather than amnioreduction or septostomy. There is evidence that the fetoscopic laser ablative method should be the Solomon technique.⁶ It should be done at Fetal Medicine centres experienced in the procedure. The recent RCOG guideline states that a centre must perform a minimum of 15 procedures in a year to maintain competence. Survival rates of at least one twin following SLPCV range between 65% and 85%, whereas survival of both twins ranges between 35% and 50%. Centres with high volumes have reported better results. Maternal morbidity is minimal. The most significant complication following fetoscopic Laser for TTTS is premature rupture of membranes (PPROM), preterm labour and delivery which may complicate 20-30% cases. Cerclage is indicated if the Preprocedure cervical length is less than 15 mm. Other complications of fetoscopic Laser for TTTS include recurrent TTTS (14%) or twin anemia polycythemia sequence (TAPS, 13%). Thus follow up ultrasound should include umbilical artery Dopplers, MCA PSV and deepest vertical pool. Delivery following Laser for TTTS should be between 34⁺⁰ and 36⁺⁶ weeks of gestation.⁶

References

1. Quintero RA, Morales WJ, Allen MH, Bornick PW, Johnson PK, Kruger M. Staging of twin-twin transfusion syndrome. *J Perinatol* 1999;19:550–5.
2. Saunders NJ, Snijders RJM, Nicolaides KH. Therapeutic amniocentesis in twin-twin transfusion syndrome appearing in the second trimester of pregnancy. *American Journal of Obstetrics and Gynecology* 1991;166(3):820–4.
3. Senat MV, Deprest J, Boulvain M, et al. Endoscopic laser surgery versus serial amnioreduction for severe twin-to-twin transfusion syndrome. *N Engl J Med* 2004;351(2):136-144.
4. Crombleholme TM, Shera D, Lee H, et al. A prospective randomized multicenter trial of amnioreduction vs. selective fetoscopic laser photocoagulation for the treatment of severe twin-twin transfusion syndrome. *American Journal of Obstetrics and Gynecology* 2007;197(4):396.e1-9.
5. Roberts D, Neilson JP, Kilby MD, Gates S. Interventions for the treatment of twin-twin transfusion syndrome. *Cochrane Database of Systematic Reviews* 2014, Issue 1. Art. No.: CD002073. DOI: 10.1002/14651858.CD002073.pub3.
6. RCOG. Monochorionic Twin Pregnancy, Management (Green-top 51). RCOG; London, England: November 2016

Color Doppler in Fetal Hypoxia: An aid in Diagnosing, Managing and Timely Termination

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The uteroplacental and fetoplacental circulations can be assessed by color Doppler a non-invasive method for understanding and studying fetal circulations. The uterine artery flow tells us the status of the uteroplacental circuit. The umbilical artery, middle cerebral artery, descending aorta, ductus venosus and umbilical vein study tells us the fetal adaptation to any hypoxic insult. With impaired placentation causing changes in the uterine artery one needs to be carefully surveying the fetal circulation for any adaptive changes. With hypoxic insult the blood flows preferentially to vital organs like the brain, heart and adrenals with compensatory shunting from the non-vital organs the abdominal viscera and lower limbs. The three ratio Systolic/Diastolic ratio, Pulsatility Index and Resistive Index are markers of resistance and thus are reflecting impedance values which are inversely proportional to the amount of blood flow in the respective vessel or organ. So brain sparing causes a high PI and brain edema would finally cause a rise in the Middle cerebral artery PI.

This tool finally helps us to fine tune the administration of steroids in a premature fetus and timely termination of

pregnancy to reduce the stay of the neonate in the ICU and reduce neonatal morbidity and mortality.

References

1. Zeeman GG, Dekkor GA: Pathogenesis of preeclampsia: a hypothesis. Clin Obstet Gynecol 1992; 35 : 317-337.
2. Maler J, Manor D, Itskovitz J, et al. Changes in uterine blood flow during human pregnancy. Am J Obstet Gynecol 1990; 162: 121-125.
3. Yong W. Park, Joe S. Choe, Haearg S. Kim; J.S. Kim. The clinical implication of early diastolic notch in third trimester. Doppler Analysis of Uterine Artery J. Ultrasound med. 1996; 15: 47-51.
4. Pijnenborg R, Bland JM, Robertson WB, Brosens I. Uteroplacental arterial changes related to interstitial trophoblast migration in early human pregnancy. Placenta 1983;4:387-414.
5. Campbell S, Diaz-Recasens J, Griffin DR, Cohen-Overbeek TE, Pearce JM, Willson K, Teague MJ. New Doppler technique for assessing uteroplacental blood inflow. Lancet 1983;i:675-7.
6. Trudinger BJ, Giles WB, Cook CM. Uteroplacental blood flow velocity-time waveforms in normal and complicated pregnancy. Br J Obstet Gynaecol 1985;92:39-45.

Laparoscopic Cerclage

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Introduction

Cervical cerclage reduces the incidence of preterm birth in selected women at risk of recurrent preterm delivery as compared to no treatment. Over the years the approach to cervical cerclage has rapidly evolved from transvaginal to trans abdominal to laparoscopic technique. The traditional surgical treatment for cervical insufficiency consists of vaginal placement of cervical stitches, known as transvaginal cervical cerclage (TVC). This method was first described by Lash and Lash in 1950 and subsequently established by Shirodkar in 1950 and McDonald in 1957. Unfortunately, in about 13% of women with cervical incompetence, the transvaginal approach to cerclage will not work so need for transabdominal approach (TAC) came into existence¹

Benson and Durfee first described the transabdominal approach to cerclage placement in 1965²

Indications & advantages of abdominal cerclage

1. Congenitally short or amputated cervix;
2. Cervical scarring that would prevent a transvaginal approach; and
3. Failure of prior vaginal cerclage.³

Advantages of the transabdominal over the transvaginal approach

1. More highup placement at the internal os
2. There is no vaginal foreign body
3. Less preterm premature rupture of membranes, chorioamniotitis (inherent to TVC)
4. Less slippage of cerclage
5. Can be used in subsequent pregnancies.

Disadvantages of transabdominal cerclage

1. More morbid procedure

2. Higher blood loss
3. Fetal complications if applied during pregnancy
4. Need for caesarean section.

Laparoscopic cerclage

These potential disadvantages of trans abdominal cerclage being more invasive and morbid can be overcome by expertise in minimal invasive surgery but it requires good surgical skills and experience.

The advances in minimally invasive surgery have led to the increasing use of laparoscopy for abdominal cerclage placement. Laparoscopic cerclage offers the benefit of reduced blood loss, reduced postoperative pain, and fewer adhesions, as well as decreased length of hospital stay and overall faster recovery time and these advantages of minimal invasive surgery can be executed to transabdominal cerclage. Similar to the transabdominal approach, laparoscopic cerclage can be placed during pregnancy or as an interval procedure. Success rates for laparoscopic cerclage were reported in the range of 76% to 100%. In 1998 Sciabetta et al. described the first laparoscopic approach for cerclage in non-pregnant women, and in the same year Lesser et al. described the same procedure performed during pregnancy^{3,4}

There has been controversy regarding timings of cerclage, experts agree that ideally this procedure should not be performed during pregnancy to avoid the risk of intraoperative bleeding or miscarriage associated with the operation itself and because of the technical problems associated with the size of the pregnant uterus and the bar against using a uterine manipulator. On the other hand, 25% of women who undergo interval LAC will not conceive after surgery and so are subjected to unnecessary surgery. Despite this, due to the limited data and the absence of randomized controlled studies, it is difficult to determine whether a cerclage should be placed before or during pregnancy⁵.

Complications of laparoscopic cerclage are similar to those associated with transabdominal cerclage and include uterine vessel bleeding, impaired surgical visibility due to morbid obesity, perioperative pregnancy loss, infection, and thromboembolism⁶.

Technique of laparoscopic cerclage

The vesicouterine peritoneum is opened and dissected off the lower uterine segment, exposing the uterine vessels anteriorly on both sides and the stitch is placed by passing each needle medial to the uterine vessels from posterior to anterior, at the level of the internal cervical os bilaterally. The landmarks for this placement include the uterosacral ligaments; a distance of 1.5 cm superior and 1 cm lateral to the insertion of the uterosacral ligament on the posterior uterus is a good initial guide for needle placement. The needles are then cut off and removed, and the Mersilene suture is then tied tightly around the cervix using intracorporeal knot tying. Alternative to mersilene tape for cervical cerclage include propylene mesh and No 1 prolene suture. There are advantages as well as disadvantages associated with each method and most effective and safe method is yet to be determined. Erosion of mersilene tape through lower uterine segment has been reported. Mesh carries its own inherent complications, use of prolene suture has been promoted because of ease of handling and removal⁶.

Outcome of laparoscopic cerclage

In 2009, Carter and associates⁷ conducted a prospective cohort study of 12 women who underwent a laparoscopic cerclage placement between 2003 and 2008 and compared them with a retrospective cohort of seven women who had a transabdominal cerclage placed between 2002 and 2008. Both laparoscopic and transabdominal approaches resulted in significantly improved fetal salvage rate (75% vs 71%, respectively), but results were not statistically different between the groups in terms of fetal survival, median gestation at delivery, median birth weight, and gestational age at loss. Cerclage placement during pregnancy or as an interval procedure also resulted in similar outcomes.

The most comprehensive review of literature comparing laparoscopic to transabdominal approaches to cervical cerclage placement was published in 2011 by Burger and co-workers⁸. A total of 135 patients in the laparoscopic group and 1116 patients in the transabdominal group were analyzed. Delivery of a viable infant at 34 weeks of gestation or more varied from 78.5% (laparoscopic) to 84.8% (abdominal). Second-trimester fetal loss occurred in 8.1% (laparoscopic) vs 7.8% (abdominal), with no reported third-trimester losses (laparoscopic) vs 1.2% (abdominal). Other pregnancy outcomes and rate of complications during pregnancy, including fetal loss, preterm premature rupture of membranes, and chorioamnionitis, were similar between the groups.

Therefore with similar obstetrical outcome in trans abdominal vs laparoscopic cerclage and added potential benefit of minimal invasive surgery like less post operative pain, short hospital stay, cosmetically better, good

magnification and visualization laparoscopic cerclage is the better viable alternative to transabdominal cerclage. However, limitations for laparoscopic cerclage include high degree of laparoscopic surgical expertise and excellent endosuturing skills.

References

1. Harger JH. Cerclage and cervical insufficiency: an evidence-based analysis. *Obstet Gynecol.* 2002;100(6):1313-1327.
2. Benson RC, Durfee RB. Transabdominal cervicouterine cerclage during pregnancy for the treatment of cervical incompetence. *Obstet Gynecol.* 1965;25(2):145-155.
3. Benson R C, Durfee R B. Transabdominal cervicouterine cerclage during pregnancy for the treatment of cervical incompetence. *Obstet Gynecol.* 1965;25:145-155.
4. Scibetta JJ, Sanko SR, Phipps WR. Laparoscopic transabdominal cervicoisthmus cerclage. *FertilSteril.* 1998;69:161-163.
5. Burger N B, Einarsson J I, Brölmann H A. et al. Preconceptional laparoscopic abdominal cerclage: a multicenter cohort study. *Am J Obstet Gynecol.* 2012;207:2730-2.
6. Tusheva, Olga A et al . "laparoscopic placement of cervical cerclage" *Reviews in obstetrics and gynaecology* 5.3-4 (2012): e158-e165.
7. Carter JF, Soper DE, Goetzl LM, Van Dorsten JP. Abdominal cerclage for the treatment of recurrent cervical insufficiency: laparoscopy or laparotomy? *Am J Obstet Gynecol.* 2009;201:111.e 1-111.e4.
8. Burger NB, Brölmann HA, Einarsson JI, et al. Effectiveness of abdominal cerclage placed via laparotomy or laparoscopy: systematic review. *J Minim Invasive Gynecol.* 2011;18:696-704.

Step-Wise Devascularisation of Uterus & Internal Iliac Artery Ligation made Easy

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PPH is a major cause of maternal mortality worldwide with an overall prevalence of approximately 6%. In India PPH accounts for more than 30% of all maternal deaths. At present, step-wise devascularization of uterus and hypogastric artery ligation form part of the spectrum of operative methods to arrest severe PPH when medical therapy is unsuccessful. They have the advantage of preserving fertility compared with emergency obstetric hysterectomy.

Step-wise Devascularization of Uterus

It is an effective and safe alternative to hysterectomy for management of uncontrollable PPH. It is a novel stepwise technique of uterine devascularization which consists of five successive steps, so if bleeding is not controlled by one step, the next step is taken until the bleeding stops. The steps include:

1. Unilateral uterine vessel ligation
2. Bilateral uterine vessel ligation
3. Bilateral low uterine vessel ligation
4. Unilateral ovarian vessel ligation
5. Bilateral ovarian vessel ligation

It was first described by AbdRabbo Sa who performed this technique in 103 women with intractable PPH. The procedure was effective in 100% thereby avoiding hysterectomy in all. Among the patients who followed up, normal menstruation and pregnancy occurred.

Procedure

Step 1

- Bladder is mobilized adequately
- A large curved needle with a No.0 polyglycolic suture is passed through the lateral aspect of the lower uterine segment as close to the cervix as possible and then back through the broad ligament just lateral to the uterine vessels. (Fig 1)

Step 2

Same procedure is repeated on other side.

Step 3

- Bladder mobilization done adequately
- Ligation of descending branch of uterine artery is done about 2 to 3 cm lower to the first suture on both sides.

Step 4

If this does not control bleeding, the vessels of the utero-ovarian arcade are similarly ligated just distal to the cornua. A suture is passed through the myometrium just medial to the vessels, then back through the broad ligament just lateral to the vessels, and then tied thereby compressing the utero-ovarian vessels anastomosis. (Fig 1)

Step 5

Same procedure is repeated on other side.

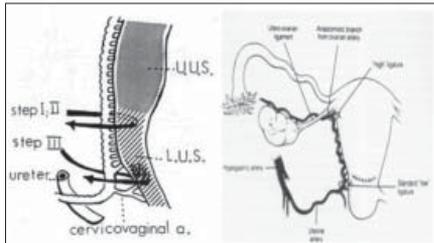


Fig 1: Steps for step-wise devascularization of uterus

Advantages

- Uterine artery is more readily accessible
- The procedure is technically easier
- There is less risk to adjacent major vessels and ureter
- There is no impact on future reproductive outcome
- As there is more distal occlusion of the blood supply so incidence of rebleeding due to collaterals is less.

Hypogastric Artery Ligation

Ligation of the hypogastric arteries (HAL) was first introduced into surgery by the end of 19th century to control intractable hemorrhage in women with advanced cervical cancer. Presently, HAL is part of the spectrum of operative procedures done to control life threatening hemorrhage.

Ligation of hypogastric artery causes profound hemodynamic changes in the pelvic circulation including drop in arterial pulsation, decrease in pulse pressure and pelvic arterial blood flow thereby transforming it into a venous system. The average decrease in pulse pressure is 77% when the procedure is done on the same side, 14% with the opposite side and 85% when vessels of both sides are ligated.

There is a rich collateral circulation of the pelvic cavity with the iliolumbar, lateral sacral, uterine and middle rectal arteries being its important components. The caliber of the collateral vessels are significantly less compared to the ligated hypogastric arteries which contributes to decrease in mean arterial pressure after ligation.

Procedure

- Palpate the common iliac artery and open the peritoneum just distal to it. The ureter can be seen attached to the peritoneum and should be retracted medially.
- The internal iliac artery is identified as it arises from the common iliac artery and runs posteriorly into the pelvis.
- The artery is ligated 2-3 cm distal to the bifurcation so as to avoid the posterior division.

- A right angled clamp is passed under the artery from lateral to the medial direction so as to avoid injuring the iliac vein. Two silk sutures are placed around the artery ½ cm apart. (Fig 2)
- The procedure is done first on the right side as there is less preperitoneal fat and so it is relatively easier to perform. The procedure is then repeated on the left side which has more preperitoneal fat associated with the mesocolon of the sigmoid.
- Bilateral femoral pulses should be palpated to ensure that the posterior division has not been included. Also, dorsalis pedis pulses are checked as there are rare instances of hypogastric perfusion of the distal extremity. Bilateral ligation of internal iliac artery does not result in complete blockage but to a significant decrease in blood supply to pelvic organs. The effectiveness of HAL in avoiding hysterectomy has been reported in upto 50% of cases.

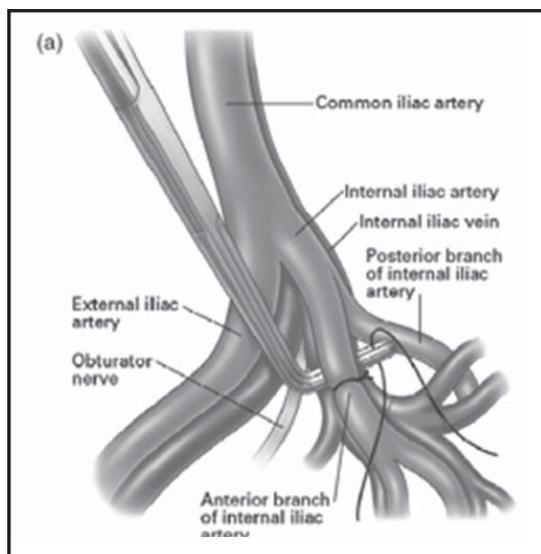


Fig 2: Hypogastric artery ligation

Complications

- Injury to the iliac vessels
- Injury to ureter
- Placement of the suture above the posterior branch.

Fertility after HAL

Various studies have confirmed that there is no impairment in subsequent fertility and pregnancy outcomes after hypogastric artery ligation. Owing to the activation of the anastomotic network immediately after ligation, the circulation in the area is never completely shut off and has no long term consequences on fertility.

Conclusion

PPH is usually unpredictable and remains a challenge for obstetricians worldwide. Step-wise devascularization of uterus and bilateral hypogastric artery ligation are life saving procedures in cases of massive obstetrical hemorrhage. These safe and effective procedures should be an integral part of obstetric and gynecologic training.

Suggested Reading

- Abd Rabbo SA. Stepwise uterine devascularization: A novel technique for management of uncontrolled PPH with preservation of uterus. *AJOG* 1994;171(3): 694-700.
- Sziller I, Hupuczi P, PappZ. Hypogastric artery ligation for severe hemorrhage in obstetric patients. *J Perint Med* 2007;35(3):187-192.
- Papathanasiou K, Tolikas A, Dovas D et al. Ligation of internal iliac artery for severe obstetric & pelvic hemorrhage: 10 year experience with 11 cases in a university hospital. *J Oster Gyne* 2008;28(2):183-184.
- Bennett KA. Surgical management of obstetric complications. *Telinde's Operative Gynecology*. 11th edition 2015.
- Papp Z, Sziller I, Hupuczi P. Controlling of profuse pelvic hemorrhage in obstetrics and gynecology by hypogastric artery ligation. In: *Current progress in Obstetrics & Gynecology*, eds John Studd, Seang Lin Tan, Frank Chervenak. 1st edition 2012.

Innovation in PPH Management: Bakri & Chhattisgarh Balloon

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Postpartum hemorrhage (PPH) is a life-threatening complication of delivery. It can occur after vaginal or cesarean delivery and is a major cause of maternal morbidity and mortality in both developing and developed countries as well^{1,2,3}. The most common cause of PPH is uterine atony; up to 80% of the cases result from suboptimal contraction of the myometrium following placental separation.

Intrauterine balloon tamponade has been suggested as an effective, easily administered minimally invasive treatment option to control uterine bleeding while preserving the fertility.^{4,5} Various types of balloons are available, like Bakri balloon, BT-cath balloon tamponade catheter, Foley catheters, Rusch balloon, condom catheters and Chhattisgarh (CG) balloon and the Sengstaken-Blakemore tube.

The Bakri postpartum balloon and the BT-cath balloon tamponade catheter are specifically designed for postpartum intrauterine tamponade, and they are the only such devices approved by the US Food and Drug Administration for this application.⁶

Mechanism of action

BT causing inward to outward pressure against the uterine wall, resulting in a reduction in persistent capillary and venous bleeding from the endometrium and the myometrium.

WHO recommendation

WHO included balloon tamponade in their 2009 Guidelines for the Management of Postpartum Haemorrhage. In 2012, WHO updated the Guidelines for the Management of Postpartum Haemorrhage and Retained Placenta to state: "The use of intrauterine balloon tamponade is recommended for the treatment of PPH due to uterine atony. It can be used for women who do not respond to uterotonics or if uterotonics are not available. This procedure potentially can avoid surgery and is appropriate while awaiting transfer to a higher-level facility."⁷

Contraindications of BT-

- Pregnancy
- Heavy arterial bleeding requiring surgical exploration or angiographic embolization
- Cervical cancer
- Congenital uterine anomaly
- Uterine distorting pathology (leiomyoma)
- Suspected uterine rupture
- Purulent infection of the vagina, cervix, or uterus
- Allergy to balloon material (silicone or latex)
- Disseminated intravascular coagulation (DIC)

Bakri balloon

In 2006, the ACOG Practice Bulletin, published by the American College of Obstetricians and Gynecologists, made mention of the Bakri postpartum balloon for its specifically tailored design that enables conservative management of uterine bleeding in cases of uterine atony and other causes of PPH.¹



Figure 1: Bakri Balloon

Advantages of Bakri

- Bakri balloon catheter is made of silicone, which is advantageous in patients with latex allergy.
- The shape more naturally conforms to the uterine cavity compared to other catheters.
- The risk of uterine perforation may be lower.
- It comes presterilized and ready to use, whereas the tip of the Sengstaken-Blakemore tube needs to be cut, has extra ports, and is more complicated to use.

Condom Catheters have to be made before use, so it takes time in assembling.

Disadvantages

Cost is a major constraint in resource-poor settings.

Chhattisgarh (CG) Balloon

CG Balloon is innovated by **Dr Nalini Mishra**, a Professor, Department of Obs & Gynae, Pt J N M Med College Raipur Chhattisgarh and first published in 2016.⁸

The commercially available uterine-specific devices are designed with an intrauterine drainage port but have a prohibitively high cost. Low resource settings have to rely on lower cost adaptations like condom balloon tamponade, which is the most cost-effective second-line management option⁶.

But condom balloon tamponade has two main disadvantages. First is not having a drainage port and therefore not letting the clinician assess the actual blood loss, and second is that the thread or suture is used to tie the condom to the catheter, which often causes leakage of saline.

To overcome these disadvantages, an innovative variation of condom balloon catheter and named it "CG Balloon" was designed.



Figure 2: CG Balloon Tray

Steps of CG balloon formation

1. Inflate the Foleys bulb with air
2. Incise and excise the balloon
3. Cut two rings from the drainage tube of the catheter, of approximately 1–2 mm width
4. Unfold the condom over distal one-third of the catheter
5. Use these rings encircling twice only to secure the condom over catheter leaving 1.5–2 cm from both the ends of condom.

6. Excise the tip of the Foley's catheter and condom together to facilitate drainage of blood.
7. Wash the device with antiseptic solution

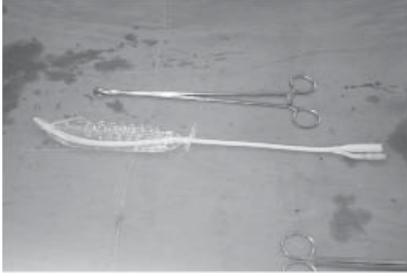


Figure 3: CG Balloon, Ready to use

Conclusion

UBT has been successfully leads to a significant reduction in need for surgery. Based on the success rate, the World Health Organization is recommending UBT as a second line of treatment in cases where uterotonics and bimanual compression fail.⁹

References

1. ACOG Practice Bulletin: Clinical Management Guidelines for Obstetrician-Gynecologists Number 76, October 2006: postpartum hemorrhage. *Obstet Gynecol.* 2006 Oct. 108(4):1039-47.
2. Khan KS, Wojdyla D, Say L, Gülmezoglu AM, Van Look PF. WHO analysis of causes of maternal death: a systematic review. *Lancet.* 2006 Apr 1. 367(9516):1066-74.
3. Lalonde A, Daviss BA, Acosta A, Herschderfer K. Postpartum hemorrhage today: ICM/FIGO initiative 2004-2006. *Int J Gynaecol Obstet.* 2006 Sep. 94(3):243-53.
4. Bakri YN, Amri A, Abdul Jabbar F. Tamponade-balloon for obstetrical bleeding. *Int J Gynaecol Obstet.* 2001 Aug. 74(2):139-42.
5. Lo A, St Marie P, Yadav P, Belisle E, Markenson G. The Impact of Bakri Balloon Tamponade on the Rate of Postpartum Hysterectomy for Uterine Atony. *J Matern Fetal Neonatal Med.* 2016 Jun 30. 1-15.
6. Aggarwal N. The "tamponade test" in the management of massive postpartum hemorrhage. *Obstet Gynecol.* 2003 Sep. 102(3):641; author reply 641-2.
7. WHO. WHO Recommendations for the Prevention and Treatment of Postpartum Haemorrhage. Geneva: WHO; 2012. Available at: http://www.who.int/reproductivehealth/publications/maternal_perinatal_health/9789241548502/en/index.html.
8. Nalini Mishra, Sumi Agrawal, Kanchan Gulabani, Chandrashekhar Shrivastava. Use of an Innovative Condom Balloon Tamponade in Postpartum Haemorrhage: A Report *J Obstet Gynaecol India.* 2016 Feb; 66(1): 63-67.
9. Tindell K, Garfinkel R, Abu-Haydar E, Ahn R, Burke TF, Conn K, Eckardt M. Uterine balloon tamponade for the treatment of postpartum haemorrhage in resource-poor settings: a systematic review. *BJOG. An International Journal of Obstetrics and Gynaecology* 2013; 120(1): 5-14.

Le Fort's Procedure: Simplicity Personified!

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Pelvic organ prolapse (POP) is extremely frequent in older women and by 80 years of age, 11-19% of women will undergo surgery for POP. However, compared with their younger counterparts, older women who undergo urogynecologic surgery

have a 13.6-fold increased risk of morbidity and mortality. Colpocleisis, an obliterative procedure, is a viable alternative for those who cannot tolerate extensive surgery and no longer desire preservation of coital function.

The term colpocleisis is derived from the Greek words kolpos, which means folds or hollow, and cleisis, which means closure. The first report of colpocleisis occurred in 1823 when Gerardin described denuding the anterior and posterior vaginal wall at the introitus and suturing them. The technique currently used, however, is a modification of that first described in 1877 by Leon LeFort. Total colpocleisis involves complete removal of vaginal mucosa while in partial colpocleisis (LeFort's modification) lateral vaginal mucosa on both sides is left behind to form lateral tunnels. LeFort's original description called for the creation of 2 trapezoids of the anterior and posterior vaginal epithelium with subsequent imbrication creating a tissue platform. The remaining lateral vaginal epithelium is contiguous with the cervix and creates 2 lateral tunnels, permitting postoperative drainage as well as a channel for any postmenopausal bleeding remote from surgery.

Colpocleisis is a highly effective technique with low associated morbidity for correcting POP in elderly women. Despite advances in surgical techniques and the many options available to surgeons and their patients today, colpocleisis remains the least invasive and most durable surgical repair available and stands to become an increasingly popular procedure to treat POP. Patients who are ideal candidates for colpocleisis usually have poor functional status with medical comorbidities rendering them unsuitable for extensive reconstructive procedures. Because this procedure precludes sexual intercourse, it should be reserved only for those who are not, and do not plan future coital activity. Advantages to this approach include shorter operative time, decreased morbidity, decreased blood loss, faster recovery, and high anatomic success rates. Colpocleisis as a definitive surgical intervention results in a positive impact on bowel, bladder, and prolapse symptoms. A high rate of satisfaction and low levels of regret have been reported.

Sling surgery for SUI correction and posterior perineorrhaphy can be performed at the same time along with Lefort's surgery if indicated. In a study by Zebede et al of 310 women, the largest case series to date, reported a 98.1% anatomic success with a 92.9% patient satisfaction. The complication rate was low (15.2%) and the mortality rate was 1.3%; this suggests that colpocleisis is a low-risk, effective procedure.

The primary disadvantage to obliterative procedures is loss of the ability to have vaginal intercourse. In addition, the procedure precludes the ability to evaluate the cervix or uterus for pathologic changes. Evaluating candidates for cervical or uterine abnormalities prior to surgery is therefore important. This entails reviewing previous pap smears and cervical biopsies and asking targeted questions regarding patients with postmenopausal bleeding who may require endometrial biopsy or ultrasound to evaluate endometrial thickness.

Although this surgery is minimally invasive, patients with severe cardiopulmonary risk factors leading to increased anesthetic risk may not be able to undergo this surgery. This surgery is contraindicated in patients with cervical and uterine pathology requiring extensive surgical resection and staging of disease. The ideal patient would therefore have negative pap smears and no history of postmenopausal bleeding with uterine pathology. Hematoma formation is the most common culprit in the breakdown or failure of colpocleisis. The most common complication is urinary tract infection, urinary retention though rare.

LeFort colpocleisis is a highly effective surgical treatment option for POP in elderly and provides improvements in both pelvic floor symptoms and body image. The long-term high satisfaction and low regret after surgery confirms that it is an excellent option for well selected patients.

Mini Sling for SUI

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Introduction

Compared with traditional operations of Standard Midurethral Slings (SMUS), the main advantages of the 'mini-sling' are the avoidance of a blind needle passage insertion through both retropubic and groin trajectories; while the mesh placement deep into muscle through a single vaginal incision to create a similar suburethral hammock as SMUS and being a shorter length polypropylene tape, less foreign material is inserted into human body. Due to shorter trajectory of insertion it needs a robust anchoring mechanism to the obturator complex with a strong post insertion pullout force, while Tension-free nonanchored SMUS depend on their post insertion fixation mechanism on friction to nearby tissues within their relatively long trajectory of insertion.

Clinical Efficacy/ Success Rate???.

Following the Cochrane recommendation, the updated systematic review¹ showed that after excluding the TVT-Secur sling (anchoring via "Velcro-style secure tip"), there is no significant difference in patient-reported cure rate and objective cure rate between these two methods. SIMS has an earlier and faster postoperative recovery.

Surgical Technique

IV antibiotics were administered pre-operatively. Patient is placed in the dorsal lithotomy position and general, regional, or local anaesthesia is administered at the discretion of the operating surgeon and anaesthesiologist.

The bladder is entirely drained and a 1 - 2 cm incision is made in the anterior vaginal wall at the level of the midurethra. The vaginal epithelium is then bilaterally undermined and separated from the endopelvic fascia using sharp dissection to the level of the inferior pubic rami, creating a pathway for delivery of the sling arms.

One of the integrated self-fixating tips is placed onto the needle by sliding it over the end of the needle (**Tip 1**). The needle/sling assembly is inserted toward the location identified (**Tip 2**) such that the flat of the handle is perpendicular to the desired path. The needle is advanced along the posterior surface of the ischiopubic ramus to pass the distal arm self fixating tip through the obturator internus muscle until the midline mark on the mesh is approximately at the midline position under the urethra. Once positioning is optimized, the self fixating tip is deployed from the needle.

This is repeated in similar fashion on the opposite side, ensuring the appropriate sling tension under the urethra (**Tip 3**). If sling appears to be too loose after placing both tips, more tension can be added by utilizing the optional redocking feature (**Tip 4**). The vaginal incision is then sutured closed with delayed absorbable suture.

Procedure Tips

Tip1. Ensure that the integrated self fixating tip is oriented such that the mesh wraps along the outside of the needle bend.

Tip2. To visualize needle insertion orientation, locate insertion of adductor longus tendon on the patient's pubic ramus. Palpate the notch along the internal edge of ischiopubic ramus where the adductor longus tendon and the inferior pubic ramus meet. The needle insertion should be aimed at the location of this notch.

Tip3. Kennelly et al. reported in their study that the tensioning technique was per surgeon discretion². Some surgeons prefer to perform the procedure without a spacer having the sling hug the urethra³, while others prefer to use a pair of Metzenbaum scissors as a spacer for the minisling⁴.

Tip4. For Use of optional redocking feature, first sling preparation is done by threading a 2.0 polypropylene suture through sling tip and a knot is placed at the distal suture end. Then thread suture through needle tip and slide the sling tip/suture assembly onto the needle tip until fully seated. This sling tip is placed first according to procedural instructions and the needle is disengaged from sling tip and is taken off the suture. Suture is left still threaded through first sling tip and remains hanging outside of patient. Then second sling tip is placed according to procedural instructions.

Now if additional tensioning is required, the unknotted suture end is threaded through needle tip and needle is advanced toward sling tip. The sling is advanced until desired tension is achieved. Then the suture is removed from the patient by pulling knotted end of the suture.

Controversies

Latest update of NICE (National Institute for Health Care and Excellence) guidelines⁵ states that this mesh implant is intended to be permanent but, if removal is needed because of complications though rare, the anchoring system can make the device very difficult or impossible to remove. Moreover still the evidence on efficacy in the long term is inadequate in quality and quantity.

References

1. Mostafa A, Lim CP, Hopper L, Madhuvrata P, Abdel-Fattah M. Single-incision mini-slings versus standard midurethral slings in surgical management of female stress urinary incontinence: an updated systematic review and meta-analysis of effectiveness and complications. *Eur Urol.* 2014 Feb; 65(2):402-27.
2. Kennelly M, Moore R, Nguyen J, Lukban J, Siegel S. MiniArc single-incision sling for treatment of stress urinary incontinence: 2-year clinical outcomes. *Int Urogynecol J.* 2012;23(9):1285-91.
3. Oliveira R, Botelho F, Silva P, Resende A, Silva C, Dinis P, et al. Exploratory study assessing efficacy and complications of TVT-O, TVT-Secur, and Mini-Arc: Results at 12-month follow up. *Eur Urol.* 2011;59(6):940-4.
4. Gauruder-Burmester A, Popken G. TheMiniArc sling system in the treatment of female stress urinary incontinence. *Int Braz J Urol.* 2009; 35(3):334-43.
5. Single-incision short sling mesh insertion for stress urinary incontinence in women Interventional procedures guidance Published: 12 October 2016. nice.org.uk/guidance/ipg566.

Tissue Retrieval Techniques in Laparoscopy

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Tissue retrieval in Laparoscopic surgeries has always been a challenge. With exponential advancements in gynecological laparoscopic surgeries, safe retrieval of the resected tissue is of paramount importance, as there is a need to avoid spillage of contents to prevent dissemination of the disease. The spillage rate would depend upon the size of excised mass, surgical expertise and the route of removal of the tissue. The various modalities are discussed here.

Smaller tissues can be extracted directly through the 10mm trocar sleeve. Prophylactic salpingectomy specimens can thus be removed. Endometriotic cysts can be lengthened like a ribbon using Z technique. Similarly, extraction of small fibroids and adenomyomectomy tissue can also be achieved. Occasionally a myoma, para-ovarian cyst, fimbrial cyst, omental piece or a large bony piece encountered during dermoid cystectomy can be retrieved directly through the port site. Earlier, all the specimens used to be removed directly through port site by enlarging

one of the incisions. But this could result in contamination, port site implantation and hernia formation.

Today, we remove most of the tissues by placing in a bag. Commercially, a variety of endobags¹ are available which are being manufactured by various companies. Though expensive, they are convenient to use and are usually strong enough to prevent its rupture during the extraction procedure. Indigenous bags can also be made by the gynaecologist herself by using a surgical glove or any other sterile polythene pouches^{2,3} that are available in the operation theatre. This is specially useful for very large specimens which cannot be accommodated in the commercial endobags. The operating surgeon has to be extra careful during the use of these simple self-made bags, as they can rupture easily.

During ovarian cystectomy procedure, the ovary can be put in an endobag to avoid spillage during inadvertent leakage of contents. For retrieval of the separated tissue, which may be a cyst, ectopic pregnancy or any other specimen, is positioned in the endobag through its wide opening. This opening is either zipper type⁴ or has a special closing mechanism involving a metal wire or purse string. The system prevents spillage during the retrieval. The port is slightly enlarged and mouth of endobag is exteriorised and held wide open. It is pulled towards abdomen and a nick is made over the cyst with the help of a stab knife. After suction of contents to decompress the cyst, further removal is facilitated by tugging and pulling the tissue with forceps. This is done under laparoscopic monitoring, so as to ensure that no damage to the internal organs is encountered. Later on, towards the end of the surgery, the site of tissue retrieval ought to be closed with the help of cobbler's needle to avoid port site hernia formation in post-operative period,

The tissue can also be removed through the natural orifice viz. vagina⁵. All benign specimens of uterus, ovaries and tubes following Total Laparoscopic Hysterectomy are routinely being extracted through vagina; if necessary by coring or piecemeal morcellation. The suspicious ovarian cysts can be placed in a bag and removed intact without spillage. Laparoscopic radical hysterectomy specimen and lymph nodes can be collected in a bag or a vaginal tube and then extracted via vaginal route. Posterior colpotomy is used for tissue retrieval where concomitant hysterectomy is not planned⁶. Through this, small fibroids and ovarian cysts can be easily removed. Colpotomy can be closed laparoscopically. But there may be various difficulties in vaginal removal like loss of pneumo- peritoneum, vaginal laceration, vaginal hematoma and occasional damage to the nearby structure. The colpotomy may be difficult to perform if POD is obliterated by the adhesions due to endometriosis or PID. However, transvaginal specimen extraction through posterior colpotomy in women with uterus in situ represents a safe, feasible, cosmetically better technique.

Morcellation merits a special mention here. Myoma or a subtotal hysterectomy specimen being solid organs, they have to be morcellated into long ribbons with the help of Electronic power morcellator⁷ for its removal. Recently, there is increased awareness to avoid dissemination of an undiagnosed leiomyosarcoma and prevent secondary disseminated peritoneal leiomatosis⁸. Commercially, large morcellation bags are available in various sizes. The myomas are placed in the bag. After inserting the telescope and morcellator in the bag, a secondary cavity is created by insufflation. Thus, the procedure of morcellation⁹ is accomplished without any fragments shooting and spreading in the abdomen. In LAM (Laparoscopically assisted myomectomy)¹⁰, after laparoscopic enucleation of a large fibroid, it is removed through a small low transverse abdominal incision and the uterine myomectomy site is sutured after exteriorising the uterus through the small incision. This saves operating time and safety for the patient; specially when the surgeon is not highly skilled in laparoscopic suturing.

The modality of surgical specimen extraction is extremely important in the setting of minimally invasive operations. The aim is to find feasibility, safety, and applicability of various techniques to achieve retrieval of the resected specimen with minimum spillage of contents, so as to avoid dissemination of disease, infection or malignancy.



Figure 1. Dermoid cyst in Endobag



Figure 2. Morcellation in bag

References:

1. Schellpfeffer MA. A novel laparoscopic tissue retrieval **device**. JLS. 2011 Oct-Dec;15(4):527-32. doi: 10.4293/108680811X13176785204319.
2. Mashiach R et al. A simple, inexpensive method of specimen removal at laparoscopy. J Am Assoc Gynecol Laparosc. 2002 May; 9(2):214-6.
3. Chatzipapas IK, et al. The "remote control" laparoscopic bag: a simple technique to remove intra-abdominal specimens. Obstet Gynecol. 1998 Oct; 92(4 Pt 1):622-3.
4. Weber A, et al. Retrieval **of specimens in laparoscopy using** reclosable zipper-type plastic bags: a simple, cheap, and useful method. Surg Laparosc Endosc. 1998 Dec; 8(6):457-9.
5. Ghezzi F, et al. Vaginal extraction of pelvic masses following operative laparoscopy. Surg Endosc. 2002 Dec;16(12):1691-6. Epub 2002 Jul 29.
6. Uccella S, et al. Transvaginal specimen extraction at laparoscopy **without concomitant hysterectomy: our experience and systematic review of the literature**. J Minim Invasive Gynecol. 2013 Sep-Oct; 20(5):583-90. doi: 10.1016/j.jmig.2013.02.022. Epub 2013 Apr 25.
7. Miller CE. Methods of tissue **extraction in advanced** laparoscopy. Curr Opin Obstet Gynecol. 2001 Aug;13(4):399-405.
8. Meurs EAIM, et al. Comparison of Morcellation **Techniques at the Time of Laparoscopic Hysterectomy and Myomectomy**. J Minim Invasive Gynecol. 2017 Jul - Aug; 24(5): 843-849. doi: 10.1016/j.jmig.2017.04.023. Epub 2017 May 5.
9. Paul PG, et al. Contained Morcellation for Laparoscopic Myomectomy Within a Specially Designed Bag. J Minim Invasive Gynecol. 2016 Feb 1;23(2):257-60. doi: 10.1016/j.jmig.2015.08.004. Epub 2015 Aug 7.
10. Dubin AK, et al. Minilaparotomy Versus Laparoscopic Myomectomy After Cessation of Power Morcellation: Rate of Wound Complications. J Minim Invasive Gynecol. 2017 Sep - Oct;24(6):946-953. doi: 10.1016/j.jmig.2017.05.010. Epub 2017 May 26.

Laparoscopic Myomectomy

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Laparoscopic myomectomy provides an acceptable, and perhaps a preferable, alternative to abdominal myomectomy for women with symptomatic fibroids who desire uterine preservation and who have infertility primarily related to fibroids.

Laparoscopic myomectomy offers the advantage of shorter hospital stay, faster recovery, less postoperative pain and better cosmesis^{1,2}.

Preoperative assessment is important to determine the operative strategy according to size, number, and location of the myomas. Precise preoperative diagnosis indicates whether laparoscopic myomectomy is possible or whether laparotomy should be performed for large or numerous myomas. Preoperative evaluation done with TVS (Transvaginal ultrasound) and MRI (Magnetic Resonance Imaging) with a sensitivity of 95-100% and 100% respectively. Leiomyomas are classified according to PALM-COEIN classification of AUB (Abnormal uterine bleeding).

For large leiomyomas, preoperative GnRH can be considered. This medical treatment is capable of inducing a substantial reduction in the volume of the myoma (up to 50%) by reducing circulating oestrogen levels. Maximum reduction is achieved by a twelve-week therapy. However, after cessation of therapy, the myoma can again increase its size, up to the initial diameter, within three months. It leads to difficult dissection due to loss of

planes and higher recurrence rates later on as regressed small fibroids tend to regrow later.

In laproscopic myomectomy, placement of ports might be done at higher level according to the size of leiomyoma^{3,4}. To minimize the blood loss perioperatively antifibrinolytics (tranexamic acid) can be used. During intraoperative vasoconstrictive agents (vasopressin) or vascular occlusion techniques can be used. Vasopressin used in diluted form, injected at the base of myoma till it blanches. Precaution to be taken while injecting to prevent accidental entry into systemic circulation causing hemodynamic instability.

Vertical serosal incision is preferred as vascularity is maximum at the periphery of the leiomyoma. If the myoma distorts or occludes a fallopian tube, the incision is made so that the myoma under traction can be pulled away medially from the tubal cornua and in some of these cases, a transverse incision can be considered if far from the tubal cornua.

During enucleation dissection should stay inside the pseudocapsule at all times. Myoma enucleation can easily be performed via all kinds of single-port entries (SILS: single incision laparoscopic surgery, LESS: laparo-endoscopic single-site surgery), natural orifice surgery (NOS), and natural orifice transluminal endoscopic surgery (NOTES)⁵. The problem, however, lies in the morcellation of the material and the extraction.

During hemostasis avoid indiscriminate use of excessive coagulation. Suturing is done in multilayers⁴ to avoid weakening of the myometrium and decrease the risk of scar dehiscence and rupture in future pregnancy. The underlying principle is that good approximation without hematoma formation is important in the healing of myomectomy wounds.

Precautions to be taken before closure, an underwater examination is done to detect bleeding from vessels and viscera; tamponaded during the procedure by the increased intraperitoneal pressure of the CO₂ pneumoperitoneum. Pneumoperitoneum is displaced with 3 to 5 L of Ringer's lactate solution, and the peritoneal cavity is irrigated and suctioned vigorously with this solution until the effluent is clear of blood products, usually after 5 to 10 L. Bleeding can be controlled using microbipolar forceps to coagulate through the electrolyte solution.

To prevent postoperative adhesions, use antiadhesive techniques (like Interceed, Seprafilm, spray gel)^{3,5}.

Complications related to laproscopic myomectomy include infection, hemorrhage, visceral injury, adhesions, uterine dehiscence/rupture and uterine fistula^{5,6}.

Immediate complication rate, fertility and obstetric outcome appear to be similar to abdominal myomectomy⁴.

It can be concluded that laproscopic myomectomy is feasible in selected patients, but require considerable experience in advanced operative laparoscopy.

References

1. Alessandri F, Lijoi D, Mistrangelo E, Ferrero S, Ragni N. Randomized study of laparoscopic versus minilaparatomic myomectomy for uterine myomas. *J Minim Invasive Gynecol.* 2006;13:92–7.
2. Holzer A, Jirecek ST, Illievich UM, Huber J, Wenzl RJ. Laparoscopic versus open myomectomy: A double-blind study to evaluate postoperative pain. *Anesth Analg.* 2006;102:1480–4.
3. Sinha R, Sundaram M. Laparoscopic Management of Large Myomas. *Journal of Gynecological Endoscopy and Surgery.* 2009;1(2):73-82. doi:10.4103/0974-1216.71611.
4. Desai P, Patel P. Fibroids, Infertility and Laparoscopic Myomectomy. *Journal of Gynecological Endoscopy and Surgery.* 2011;2(1):36-42. doi:10.4103/0974-1216.85280.
5. Liselotte Mettler, Thoralf Schollmeyer, Andrea Tinelli, Antonio Malvasi, and Ibrahim Alkatout, "Complications of Uterine Fibroids and Their Management, Surgical Management of Fibroids, Laparoscopy and Hysteroscopy versus Hysterectomy, Haemorrhage, Adhesions, and Complications," *Obstetrics and Gynecology International*, vol. 2012, Article ID 791248, 8 pages, 2012. doi:10.1155/2012/791248.
6. Sizzi O, Rossetti A, Malzoni M, Minelli L, La Grotta F, Soranna L, et al. Italian multicenter study on complications of laparoscopic myomectomy. *J Minim Invasive Gynecol.* 2007;14:453–62.

Robotic Management of Deep Endometriosis

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1 out of 10 women of reproductive age group suffer from endometriosis.

Deep infiltrating endometriosis involves the uterosacral ligaments, rectovaginal septum, bowel, ureters or bladder. Resection of deep endometriosis is one indication that might benefit most with magnification, camera stability and dexterity of robotic instruments. Multiple retrospective series and a meta-analysis have reported feasibility and success with robotic-assisted laparoscopic surgery in deep endometriosis. These reports indicate no difference in the length of stay or complications with robotic surgery. (Bedaiwy et al 2013, Siesto et al 2014, Collinet P 2014, Nezhat 2015, SEA Araujo 2016) However, no study has yet compared the long-term outcome of robotic versus CLS and initiation of such studies is urgently needed to demonstrate the role of robotic surgery in endometriosis resection.

Surgical Management of endometriosis is indicated in women with pelvic pain, endometrioma, or infertility not responding to medical therapy. The goal of conservative surgical management is to remove endometriotic lesions and restore normal anatomy. On the other hand, the goal of definitive management of endometriosis includes removal of both ovaries, uterus and all visible endometriotic implants. Surgery is mostly followed by adjuvant hormonal therapy.

The patient is closely involved in our treatment planning. Preoperative workup usually includes transabdominal scans, transvaginal scans, and MRI abdomen. Cystoscopy and colonoscopy may be required to detect infiltrating lesions. The patient is informed that 10-30% of patient with deep endometriosis might need reoperation after conservative surgery and approximately 20% of women might not show improvement in symptoms after surgery. All risk associated with surgery are explained and they are informed about the need of multidisciplinary assistance.

The procedure is done under GA in steep Trendelenburg position. V care manipulator is used to helping delineate anatomy and providing counter traction. The 12 mm robotic camera port is inserted 24-25 cm above the symphysis pubis. R1 and R2 arms are placed 10 cm lateral and 2 cm caudal to camera port, on either side. R 3 is placed 10 cm further lateral to R2 to the left at the level of camera port. The assistant laparoscopic port is inserted in the right upper abdomen. Surgery is initiated by identifying fixed landmarks in lower abdomen like round ligaments or IP ligaments. Retroperitoneum is opened at the pelvic side wall. IP ligament is identified, coagulated and divided by bipolar. Anatomy is restored by dissecting ureters and then uterine arteries. Meticulous dissection of cleavage planes is the key in this step. Soiling of the tissues with the endometriotic cyst content should be avoided. Uterine arteries are ligated away from the ureter. The rectum is dissected off the rectouterine nodules. After anatomy is properly delineated and hysterectomy with bilateral salpingo-oophorectomy is completed. Endometriotic implants are shaved off the ureter, bladder, and rectum. Thinned areas of the bladder and bowel muscularis are buttressed with interrupted 3-0 vicryl sutures. The decision for resection followed by anastomoses is taken as per the case. Postoperatively patients are given 150 mg of depot Provera intramuscularly.

References

1. Nezhat, C.R., Stevens, A., Balassiano, E., Soliemannjad, R., 2015. Robotic-assisted laparoscopy vs conventional laparoscopy for the treatment of advanced stage endometriosis. *J. Minim. Invasive Gynecol.* 22, 40–44. doi:10.1016/j.jmig.2014.06.002.
2. Nezhat, F.R., Sirota, I., 2014. Perioperative outcomes of robotic assisted laparoscopic surgery versus conventional laparoscopy surgery for advanced-stage endometriosis. *J.S.L.S.* 18. pii: e2014.00094. doi:10.4293/JLS.2014.00094
3. Collinet, P., Leguevaque, P., Neme, R.M., Cela, V., Barton-Smith, P., Hébert, T., Hanssens, S., Nishi, H., Nisolle, M., 2014. Robot-assisted laparoscopy for deep infiltrating endometriosis: international multicentric retrospective study. *Surg. Endosc.* 28, 2474-2479. doi:10.1007/s00464-014-3480-3.
4. Bedaiwy, M.A., Rahman, M.Y., Chapman, M., Frasure, H., Mahajan, S., von Gruenigen, V.E., Hurd, W., Zanotti, K., 2013. Robotic-assisted hysterectomy for the management of severe endometriosis: a retrospective review of short-term surgical outcomes. *JLS* 17, 95–99. doi:10.4293/108680812X13517013317275.
5. Siesto, G., Ieda, N., Rosati, R., Vitobello, D., 2014. Robotic surgery for deep endometriosis: a paradigm shift. *Int. J. Med. Robot.* 10, 140–146. doi:10.1002/rcs.1518
6. Araujo, S.E.A., Seid, V.E., Marques, R.M. et al. *J Robotic Surg* (2016) 10: 165. <https://doi.org/10.1007/s11701-016-0586-8>

Rh Iso-Immune / Fetal Anemia: When to refer, what to do ?

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When an Rh Negative woman comes for pregnancy booking, re-check the blood group and Rh If the husband/partner is Rh +ve : ICT should be done immediately.

If ICT > 1:16 (Critical titre), do not monitor by repeat ICTs (already critical), not after IVIG / Hydrops develops Hydrops - ascitis, pleural / pericardial effusions, scalp edema - late sign of cardiac failure, hypoproteinemia)

Refer to center with

- 1. Expertise in fetal monitoring and invasive fetal therapy.**
- 2. Neonatal with expertise in Exchange transfusion**
- 3. Blood Bank- easy availability of fresh, irradiated, CMV – ve, packed (Hct : 75-80%), O Rh - ve RBCs.**

What to do?

SMFM Clinical Guideline: diagnosis & management of fetus at risk:

1. Patient should be referred to center with expertise in invasive fetal therapy.
2. MCA-PSV be measured by US Doppler, as the primary technique
3. Amniotic fluid delta OD450 not be used to diagnosis fetal anemia
4. Proper technique of MCA-PSV should be used by trained personnel
5. If fetus at risk for severe fetal anemia (MCA >1.5 MOM or hydropic), fetal blood sampling performed with preparation for intrauterine transfusion, unless POG: risks associated with delivery < than IUT
6. MCA-PSV / predicted decline in fetal hb for timing second procedure
7. Pregnancies with fetal anemia be delivered at 37-38 weeks of gestation unless indications develop prior to this time.

Monitor Fetus for earliest diagnosis of fetal anemia by :

- 1) Middle Cerebral Artery Doppler – PSV

Blood flow velocity in MCA is increased in fetal anemia due to :

1. increased cardiac output, hyperdynamic circulation
 2. reduction in blood viscosity with decline in hematocrit
 3. tissue hypoxia and lactate production leads to vasodilation of cerebral blood vessels, increased flow.
- 2) Ultrasound : Hepatomegaly/Placentomegaly/Cardiomegaly/Polyhydramnios/Dilated hepatic vein

What to do if there is severe Fetal Anemia & pregnancy < 32-34 weeks ?

Intra-uterine fetal blood transfusion (IUT)

- Pregnancies with severe fetal anemia at 18-35 weeks of gestation
- Fetal blood obtained via percutaneous umbilical blood sampling for hematocrit/hemoglobin determination when fetal middle cerebral artery peak systolic velocity is >1.50 MOM
- First IUT: if fetal hemoglobin is <2SD below mean for gestational age

- A hematocrit <30% also used as threshold for fetal transfusion
- Before 18 weeks - small size of relevant anatomic structure causes technical challenges
- After 34-35 weeks - IUT is riskier than delivery followed by postnatal transfusion therapy.

Latest Experience at AIIMS:

- Total of 303 IUTs in 102 fetuses - 22 hydropic at first IUT
- Mean POG /Hct at first IUT: 26.9 ± 3.3 wks & 17 ± 7.82 % respectively
- Average number of transfusions: 2.97 (range 1-7) / fetus
- Overall survival 93 %, mean POG at delivery- 34.5 ± 1.94 (28.3-37.4)weeks
- Mean hct at delivery - 36.9 ± 8.77 % (range 10-66 %).
- Emergency CS after transfusion performed in 4 pregnancies
- Total PR complication rate - 2.97 %, overall loss - 1.65 % per procedure.
- IVT – safe, improves perinatal survival in fetuses with severe anemia.

(Deka D, Dadhwal V, Sharma AK, Arch Gynecol Obstet. 2016)

These high risk fetuses at risk of icterus and anemia need intensive Neonatal Care :

- Intensive monitoring for anemia, hyperbilirubinemia, prematurity.

Management accordingly by Exchange transfusion , Phototherapy, IVIG.

In Conclusion: Fetal anemia due to Rh-isoimmunisation is a medical emergency.

Severe Fetal Anemia mostly due to Rh isoimmunisation still occurs in India, leading to critical condition in fetus / baby. Women often referred late (with hydrops fetalis).

Successful management includes - Referral to Fetal Medicine Centers , Intensive serial Ultrasound and Doppler monitoring for fetal anemia,. Fetal blood transfusions require great skill but are life saving.

Options Beyond Laser in Complicated Twin Pregnancy

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Complications unique to twin pregnancies include selective fetal growth restriction (sFGR), discordant anomaly and single intrauterine fetal demise (sIUFD). Monochorionic twins are prone to their own unique complications like twin twin transfusion syndrome (TTTS), twin anemia polycythemia sequence (TAPS) and acardiac twin or twin reversed arterial perfusion (TRAP). Management of complications in dichorionic twins is more straightforward the affectation of one twin is unlikely to affect the other. However, in monochorionic twin the co-twin is at increased risk of fetal morbidity and mortality due to the intertwine vascular anastomoses of the single placenta. sIUD in monochorionic twins is associated with 15% risk of co-twin demise and 26% risk of neurodevelopment morbidity in the surviving twin (comparable figures for dichorionic twins are 3% and 2% respectively).¹ Monoamniotic twins have their own set of problems of cord entanglement and sudden IUFD.

Fetoscopic guided Laser ablation, wherever available, is considered the treatment of choice for TTTS and sFGR (when indicated) in MCDA twins. Amnioreduction can be considered as an alternative when expertise for Laser coagulation

is not available or to relieve maternal distress pending in-utero transfer to a centre equipped with the facility for laser. It may also be considered as an option when TTTS presents after 26 weeks.² However, this may complicate future treatment if associated with inadvertent septostomy. Another option is to offer selective termination of pregnancy using bipolar cord coagulation (BCC) of the fetus to be terminated or using radiofrequency ablation.³ This may be appropriate if there is evidence of cerebral damage in either twin.⁴ Selective feticide may be the best option when TTTS is complicated with a discordant, lethal anomaly in one fetus, or there is severe fetal growth restriction remote from viability, recurrent TTTS, severe TAPS, failed laser due to close placental cord insertions or significant intra-amniotic bleeding or markedly discolored fluid from previous intrauterine procedure or iatrogenic subchorionichemato- ma and bleeding. Experience with selective feticide in TTTS is limited, with survival rate of one twin 77% to 92% and PPROM 20% within 3 weeks of the bipolar cord coagulation (BCC).⁵ In a study comparing BCC to radiofrequency ablation (RFA) for selective reduction in complicated MC pregnancies, including TTTS, the authors found no difference in the overall survival rates with 87.5% in the RFA group and 88% in the BPC group ($P = 0.94$); median gestational age at delivery was 36 weeks (range, 26 to 41 weeks) in the RFA group and 39 weeks (range, 19 to 40 weeks) in the BCC group ($P = 0.59$). However, the PPROM rate is significantly higher in the BCC group (22.5%) when compared with the RFA group (5%) ($P = 0.09$).⁶ Some women request termination of pregnancy when severe TTTS is diagnosed and this should also be discussed as an option.

References

1. Hillman SC, Morris RK, Kilby MD. Co-twin prognosis after single fetal death. A systematic review and meta-analysis. *ObstetGynecol* 2011;118:928-40.
2. RCOG. Monochorionic Twin Pregnancy, Management (Green-top51). RCOG; London, England: November 2016
3. Skupski D, Luks L, Papanna R, et al. Laser ablation of placental anastomoses in twin-to-twin transfusion syndrome: preoperative predictors of death by recursive partitioning. *PrenatDiagn*. 2013;33:279–283.
4. Eixarch E, Valsky D, Deprest J, et al. Preoperative prediction of the individualized risk of early fetal death after laser therapy in twin-to-twin transfusion syndrome. *PrenatDiagn*. 2013;33: 1033–1038
5. Lewi L, Gratacos E, Ortibus E, et al. Pregnancy and infant outcome of 80 consecutive cord coagulation in complicated monochorionic multiple pregnancies. *Am J Obstet Gynecol*. 2006;194: 782–789.
6. Roman A, Papanna R, Johnson A, et al. Selective reduction in complicated monochorionic pregnancies: radiofrequency ablation vs. bipolar cord coagulation. *Ultrasound Obstet Gynecol*. 2010;36:37–41.

Growth problems, Monitoring and Timing Delivery in Multiples

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Twin growth slows down in the third trimester, from 30-32 weeks gestation, as compared to singleton pregnancy. This may be due to environmental constraints, complicated by vascular anastomosis in monochorionic twins. Till more data is available singleton charts are used for monitoring growth in twin gestation. Growth aberrations may involve one or both twins and contribute to morbidity and mortality. Intrauterine growth restriction (IUGR) may be present in one or both twins in 25-35% pregnancies. Discordant growth of > 20% complicates 16% of twin pregnancy.

Clinical examination is not useful to detect growth problems in twins. Hence, serial ultrasound (USG) for fetal biometry and estimated fetal weight estimation is important to detect growth aberrations in twins. Ultrasound

every 4 weeks from 24 weeks gestation in dichorionic twins (DC) and from 18-22 weeks in monochorionic twins (MC) is recommended.

DC twins monitoring: once growth problem is identified, fetal monitoring is the same as in singleton. Non stress test, biophysical profile and umbilical artery dopplers are useful in monitoring. Growth scans every 2 weeks. In uncomplicated DC pregnancy fetal monitoring is recommended from 34 weeks of gestation

Delivery: For uncomplicated DC twins it is recommended to deliver at 37-38 weeks gestation. In case of IUGR/ discordant growth management decision and decision to delivery will depend on fetal health.

MC twins: growth depends on the placental territory shared by each twin and vascular anastomosis which allow unidirectional/ bidirectional flow. Selective fetal growth restriction (sFGR) is unique complication of MC twins. EFW of smaller twin is <10th centile. Significant growth discordance may be there. Death of one twin in MC pregnancy can cause death or neurological damage to other twin. sFGR can be detected as early as 20 weeks, and is classified based on umbilical artery Doppler waveform. These cases should be monitored and managed in fetal medicine centres.

Monitoring: same tests of fetal wellbeing can be used. In cases of sFGR with abnormal umbilical artery Doppler, venous Doppler are used to monitor. In uncomplicated MC twins fetal monitoring should start at 32 weeks.

Delivery: in cases of growth aberrations, decision of delivery will depend on fetal condition and period of gestation. Unlike DC twins, compromise in one fetus very early in pregnancy may have to be managed with fetal reduction to avoid risk of sequelae in surviving twin

Uncomplicated MC twins, delivery is recommended at 36-37 weeks.

Premature Ovarian Insufficiency (POI)

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Introduction

Premature ovarian insufficiency (POI) is a clinical syndrome defined by loss of ovarian activity before the age of 40. POI is characterised by menstrual disturbance (amenorrhea or oligomenorrhea) with raised gonadotropins and low estradiol. (ESHRE 2015).

In general, POI is described as amenorrhea due to loss of ovarian function before the age of 40. The age of 40 is accepted as it is approximately two standard deviations (SD) below the average age at natural menopause (50 ± 4 years).

It is a state of female hypergonadotropic hypogonadism where the ovaries don't produce normal amounts of estrogen and don't produce and release an egg each month. It can manifest as primary amenorrhea with onset before menarche or secondary amenorrhea.

It was previously known as 'premature ovarian failure' but as 5–10% of women with POI experience spontaneous conception and delivery, "Insufficiency" more accurately describes the fluctuating nature of the condition, and does not carry the negative connotation of "failure".

It should not be confused with 'Premature Menopause' and 'Low Ovarian reserve'. Premature Menopause is

permanent cessation of menstruation and low ovarian reserve is a condition in which the ovary loses its normal reproductive potential and is characterized by regular menses and alterations of ovarian reserve tests, and can be caused by conditions affecting the ovaries, but in most cases is a consequence of age. The women with POI face challenges much wider than fertility alone.

Prevalence: POI affects approx 1% of women and is more common in women with a family history of POI. About 10% to 20% of women have a family history.

Diagnosis: The diagnosis Premature Ovarian Insufficiency is based on the presence of menstrual disturbance and biochemical confirmation. Although proper diagnostic accuracy in POI is lacking, the following diagnostic criteria were recommended:

- oligo/amenorrhea for at least 4 months, and
- an elevated FSH level > 25 IU/l on two occasions > 4 weeks apart

Causes of POI

- Idiopathic in about 90% of cases
- Genetic and chromosomal disorders: Fragile X syndrome and Turner syndrome
- Low number of Primordial follicles since birth
- Autoimmune diseases: In About 20%
 - Thyroiditis
 - Addison's disease in about 3%
- Iatrogenic: Surgery, radiotherapy, or chemotherapy.
- Metabolic disorders: Galactosemia
- Toxins. Cigarette smoke, chemicals, and pesticides • Infections: viruses

Implications

- Increased risk of cardiovascular disease, osteoporosis and cognitive impairment.
- Reduced life expectancy largely due to cardiovascular disease.
- A significant negative impact on psychological wellbeing and quality of life.
- Failure to achieve puberty
- Infertility and ART using the woman's own eggs are unlikely to be successful
- Chance of natural conception 5-10%.
- Vasomotor symptoms and symptoms associated with estrogen deficiency
- Obstetric risk
- Inheritance
- Dry eye syndrome and ocular (eye) surface

Implications for relatives of women with POI

- Relatives of women with the fragile-X premutation should be offered genetic counselling and testing.
- Relatives of women with non-iatrogenic premature ovarian insufficiency who are concerned about their risk for developing POI should be informed that:
 1. currently there is no proven predictive test to identify women that will develop POI, unless a mutation known to be related to POI was detected
 2. there are no established POI preventing measures
 3. fertility preservation appears as a promising option, although studies are lacking, and
 4. their potential risk of earlier menopause should be taken into account when planning a family.

Associated Conditions

- Low thyroid function
14% and 27% of women with POI also have low thyroid function.
- Addison's disease a life-threatening condition. About 3% of women with POI have Addison's disease.
- Chromosomal disorder eg. Fragile X, Turner syndrome

Presentation

- Most common: Menstrual problems
- Infertility may be the first symptom
- May present with typical symptoms of estrogen deficiency

The clinical presentation is variable and several misunderstandings exist regarding symptoms in POI.

1. Symptoms may intermittently disappear due to fluctuating ovarian function
2. Some women with POI may not experience any symptoms
3. Women may experience sudden severe symptoms upon cessation of the contraceptive pill
4. Symptoms are less likely in young women with primary amenorrhea

Investigations

- FSH level > 25 IU/l on two occasions > 4 weeks apart.
- Estradiol E2
- AMH should not be routinely used to diagnose POI, but may have a role when the diagnosis of POI is inconclusive.
- Chromosomal analysis should be performed in all women with non-iatrogenic POI
- Fragile-X premutation testing
- Autosomal genetic testing is not at present indicated in women with POI, unless there is evidence suggesting a specific mutation
- Screening for 21OH-Ab (or alternatively adrenocortical antibodies (ACA)) should be considered in women with POI of unknown cause or if an immune disorder is suspected.
- Screening for thyroid (TPO-Ab) antibodies should be performed in women with POI of unknown cause or if an immune disorder is suspected.
- In patients with a positive TPO-Ab test, thyroid stimulating hormone (TSH) should be measured every year.
- There is insufficient evidence to recommend routinely screening POI women for diabetes
- There is no indication for infection screening in women with POI

Counseling

Cardiovascular Health

Women with POI are at increased risk of cardiovascular disease and should be advised of risk factors that they can modify through behavioural change (e.g. stopping smoking, taking regular weight-bearing exercise, healthy weight).

All women diagnosed with Turner Syndrome should be evaluated by a cardiologist.

Bone Health

POI is associated with reduced bone mineral density (BMD) and consequent increased risk of fracture later in life, although this has not been adequately demonstrated. BMD at initial diagnosis is advisable especially where there are additional risk factors.

Women with POI should be encouraged to acquire a healthy lifestyle, involving weight-bearing exercise, avoidance of smoking, and maintenance of normal body weight with a balanced diet containing the recommended intake of calcium and vitamin D. Dietary supplementation may be required in women with inadequate vitamin D status and/or calcium intake and with low BMD.

Fertility and pregnancy in women with POI

The Loss of fertility is one of the key accompanying features of POI. Women should be informed that there is still a small chance of spontaneous pregnancy and should be advised to use contraception if they wish to avoid pregnancy.

There are no interventions that increase ovarian activity and natural conception rates and oocyte donation is an established option. However, oocyte donation from sisters carries a higher risk of cycle cancellation. Women need to understand that once POI sets in, the opportunity for fertility preservation is missed.

Obstetric risks

Women should be reassured that spontaneous pregnancies after idiopathic POI or most forms of chemotherapy do not show any higher obstetric or neonatal risk than in the general population.

Specially high risk pregnancies

- Oocyte donated pregnancies
- Pregnancies after pelvic irradiation
- Women who have received anthracyclines and/or cardiac irradiation
- Pregnancies in women with Turner Syndrome: Very high risk with maternal mortality as high as 3.5%.

Management

Women should be encouraged to acquire risk reducing behavioural changes eg: stopping smoking, regular weight-bearing exercise, healthy weight, and a balanced diet.

Hormone Replacement Therapy (HRT)

Adequate estrogen replacement is regarded as a starting point. Hormone therapy in POI has beneficial effects on plasma lipids, blood pressure, insulin resistance, and endothelial function. Women should be advised that HRT may have a role in primary prevention of diseases of the cardiovascular system, and has a definite role in bone protection, in preventing cognitive impairment and in sexual and genitor-urinary health.

HRT has not been found to increase the risk of breast cancer before the age of natural menopause. It should be continued at least until the average age of natural menopause. Progestogen should be given in combination with estrogen therapy to protect the endometrium in women with an intact uterus. Women should be informed that androgen treatment is only supported by limited data, and that long-term health effects are not clear yet.

HRT in women with POI and special issues

Turner Syndrome

Turner Syndrome Girls and women with POI due to Turner Syndrome should be offered HRT throughout the normal reproductive lifespan.

BRCA gene mutation or after breast cancer

HRT is generally contra-indicated in breast cancer survivors. However, HRT is a treatment option for women carrying BRCA1/2 mutations but without personal history of breast cancer after prophylactic bilateral salpingo-oophorectomy (BSO).

Observational data have shown that women with POI have a lower risk of breast cancer compared with controls. HRT does not appear to increase the risk of breast cancer in younger menopausal women under the age of 50.

Endometriosis

For women with endometriosis who required oophorectomy, combined estrogen/progestogen therapy can be effective for the treatment of vasomotor symptoms and may reduce the risk of disease reactivation.

Migraine, Hypertension, History of prior venous thromboembolism (VTE), Obesity and Fibroids

These are not contraindications to HRT. However, consideration should be given to changing dose, route of administration or regimen if required. Transdermal delivery may be the lowest-risk route of administration of estrogen. Women with POI and a history of prior venous thromboembolism (VTE) or thrombophilic disorder should be referred to a haematologist prior to commencing HRT.

Puberty Induction

- Puberty should be induced or progressed with 17 β -estradiol, starting with low dose at the age of 12 with a gradual increase over 2 to 3 years. In cases of late diagnosis and for those girls in whom growth is not a concern, a modified regimen of estradiol can be considered.
- Evidence for the optimum mode of administration (oral or transdermal) is inconclusive. Transdermal estradiol results in more physiological estrogen levels and is therefore preferred.

- The oral contraceptive pill is contra-indicated for puberty induction.
- Begin cyclical progestogens after at least 2 years of estrogen or when breakthrough bleeding occurs.

Some more key counseling issues

- Gonadectomy should be recommended for all women with detectable Y chromosomal material.³
- The implications of the fragile-X premutation should be discussed before the test is performed.
- Refer POI patients with a positive 21OH-Ab/ACA test to an endocrinologist for testing of adrenal function and to rule out Addison's disease
- The possibility of POI being a consequence of a medical or surgical intervention should be discussed with women as part of the consenting process for that treatment.
- Although no causal relation has been proved for cigarette smoking and POI, there is a relation to early menopause. Therefore, women who are prone to POI should be advised to stop smoking.
- In a significant number of women with POI, the cause is not identified and these women are described as having unexplained or idiopathic POI.

References

1. POI Guideline Development Group ESHRE December 2015
2. Vermeulen N, D'Angelo A, de Sutter P, Nelen W, LDM. Manual for ESHRE Guideline Development 2014; Version 2.0, Available from www.eshre.eu
3. Jiao X, Qin C, Li J, Qin Y, Gao X, Zhang B, Zhen X, Feng Y, Simpson JL, Chen ZJ. Cytogenetic analysis of 531 Chinese women with premature ovarian failure. *Hum Reprod* 2012;27: 2201-2207.
4. Genetics Committee of the Society of Obstetricians and Gynaecologists of Canada, Prenatal Diagnosis Committee of the Canadian College of Medical Geneticists, Chitayat D, Wyatt PR, Wilson RD, Johnson JA, Audibert F, Allen V, Gagnon A, Langlois S, Blight C, Brock JA, Desilets V, Farrell SA, Geraghty M, Nelson T, Nikkel SM, Skidmore D, Shugar A. Fragile X testing in obstetrics and gynaecology in Canada. *J Obstet Gynaecol Can* 2008;30: 837-846.
5. Chen S, Sawicka J, Betterle C, Powell M, Prentice L, Volpato M, Rees Smith B, Furmaniak J. Autoantibodies to steroidogenic enzymes in autoimmune polyglandular syndrome, Addison's disease, and premature ovarian failure. *J Clin Endocrinol Metab* 1996;81: 1871-1876
6. Bakalov VK, Vanderhoof VH, Bondy CA, Nelson LM. Adrenal antibodies detect asymptomatic auto-immune adrenal insufficiency in young women with spontaneous premature ovarian failure. *Hum Reprod* 2002;17: 2096-2100.
7. Dal Pra C, Chen S, Furmaniak J, Smith BR, Pedini B, Moscon A, Zanchetta R, Betterle C. Autoantibodies to steroidogenic enzymes in patients with premature ovarian failure with and without Addison's disease. *Eur J Endocrinol* 2003;148: 565-570.
8. Kokcu A. Premature ovarian failure from current perspective. *Gynecol Endocrinol* 2010;26: 555-562 Amagai Y, Ishikawa S, Gotoh T, Kayaba K, Nakamura Y, Kajii E. Age at menopause and mortality in Japan: the Jichi Medical School Cohort Study. *J Epidemiol* 2006;16: 161-166.
9. Rocca WA, Grossardt BR, de Andrade M, Malkasian GD, Melton LJ, 3rd. Survival patterns after oophorectomy in premenopausal women: a population-based cohort study. *Lancet Oncol* 2006;7: 821-828
10. The British Menopause Society consensus statement on the management of women with premature ovarian insufficiency
The British Menopause Society consensus statement on the management of women with premature ovarian insufficiency April 2017
11. The committee opinion of American College of Obstetricians and Gynaecologists No 605 July 2014

Menopausal Hormone Therapy

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Menopause is defined as the time when ovaries cease functioning and menstrual periods stop marking the end of reproductive years. Diagnosis of menopause is retrospective when a woman stops monthly period for 12 consecutive cycles. The average age of menopause in India is 48.5 ± 2 years. It may be spontaneous or induced through a surgery, chemotherapy or radiation. The total number of menopausal women in India is approximately 70-80 million. This number indicates the necessity of implementing menopause education. The life of an average Indian woman is 68-70 years, that means she spends nearly 20-30 years in postmenopausal period.

Menopause is a natural phenomenon but it is not normal. It is an estrogen deficient endocrinopathy which results in early psycho-physiological symptoms such as hot flashes, mood changes, sleep disturbances irritability (assessed by Kuppermann score) late physical changes e.g. sexual dysfunction, atrophic vaginitis and later diseases like osteoporosis CVD & Alzheimer's disease.

Postmenopausal stage of woman is also marked as start of many cancers e.g. breast cancers and genital cancers. So the woman needs careful assessment by a specialist or a group of specialists e.g. physician, ophthalmologist, oncologist & endocrinologist along with a trained gynaecologist.

There is reversal of hormonal milieu after menopause. There is reversal of estradiol (E2) estrone (E1) ratio. Estrone is the predominant hormone during menopause due to peripheral conversion from androstenedione. Other hormonal increase includes FSH, LH Testosterone. There is decrease in estradiol and inhibin B. FSH rise is more than LH as the half life of FSH is longer with delayed clearing.

According to Indian menopause society every woman can be candidate for menopause hormone therapy up to the age of 60 years. The window of opportunity is labeled between 50-60 years when MHT is safe. Of course the contraindications have to be ruled out. These are breast and endometrial cancer, venous thromboembolism, CVD and stroke.

MHT constitute a natural estrogen which is conjugated equine estrogen or estradiol valerate or 17β estradiol and a progestin component which is medroxyprogesterone acetate or dydrogesterone or micronized progesterone. The regimes can be sequential or combined. In sequential regime there is withdrawal bleeding and in combined regime there is amenorrhoea. The common indications of MHT include hot flashes, sexual dysfunction atrophic vulvovaginitis, severe osteoporosis and improvement in quality of life.

Pre treatment evaluation include hemogram lipid profile, blood sugar, papsmear, transvaginal and abdominal sonography, mammography, DEXA scan of lumbar spine and femur head.

These investigations are carried out as a base line work up of every woman after the age of 50 years whether she is receiving MHT or not.

After the institution of therapy the woman is asked to come for follow up at 3 months, 6 months and then yearly. She is asked for allaying of symptoms, compliance, side effects specially vaginal bleeding patterns. Evaluation of endometrium is indicated when there is irregular bleeding patterns, persistent bleeding pattern for more than 6 months after combined therapy, any bleeding after a period of amenorrhoea or a bleeding not controlled by hormonal manipulation.

Newer drugs have been added in MHT regimes. These includes Tibolone, Aprela, Androgens, Phytoestrogens and Arcalion. Tibolone has two estrogenic one progestogenic and one androgenic metabolite. The dose is

2.5 mg daily and it is very helpful for increasing libido. Aprela is a combination of bezedoxifene and low dose premarin. Androgens are also used as patch or gel for sexual dysfunction Phytoestrogens are used when MHT is contraindicated. Arcalion is a anteasthenic drug which is thiamine derivative (Sulbutiamine) used for menopausal women.

Menopause is no longer considered an empty nest syndrome. It is the age when woman is free from small children's worry, their education, carrier and job problems. She herself is a capable woman. She should cultivate new hobbies and reignite old passions. This could be the time for self discovery, creativity and wisdom. Self reflection and redefinition is what is required.

Vaccination in Adolescents and Young Adults

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All women of childbearing age should be evaluated for the possibility of pregnancy before immunisation. Immunisation history should be taken at first antenatal visit.

- Live viral vaccines are contraindicated during pregnancy, but risk is largely theoretical. Women who have inadvertently received live vaccine during pregnancy should be counselled not to terminate the pregnancy for teratogenic risk.
- Non pregnant women should delay pregnancy for at least 4 wks post vaccine.
- Inactivated viral vaccines, bacterial vaccines and toxoids are safe in pregnancy .
- Breast feeding women can be immunised safely.
- Pregnant women should be offered the influenza vaccine during the season .

Chicken pox /varicella

Varicella is most common in adolescents and adults in tropical region. Chicken pox is caused by the varicella zoster virus (VZV). Varicella infection in the first or early second trimester of pregnancy could lead to congenital varicella syndrome in the fetus. Primary varicella zoster infection in pregnancy may result in intrauterine infection in 27 % of patients. Congenital anomalies can be expected in 12% of infected fetuses. Maternal pneumonia is a complication in 10-20% of cases of varicella during third trimester. Risks for pneumonia increases with increasing gestational age. New borns whose mothers develop chicken pox rash from 5 days before to 2 days after delivery are at risk for development of chicken pox shortly after birth.

Women of childbearing age should get the chicken pox vaccine one to three months prior to pregnancy. If a pregnant women is not protected against chicken pox, vaccination of close contacts is the most effective way for prevention. Post partum the mother should be vaccinated against chicken pox with first dose and the second dose 6 to 8 wks postpartum. 100 % seroconversion is seen with 2 doses of varicella vaccine. It is recommended for all older than 12 months.

MMR vaccine

Measles illness during pregnancy leads to increased rates of premature labour, low birth weight and spontaneous abortions. Mumps during the first trimester leads to increased risk of fetal death. Rubella during early pregnancy leads to congenital rubella syndrome. Congenital rubella syndrome is estimated to affect 85 % of infants born to women with rubella during the first trimester. MMR vaccine is highly immunogenic after one dose with seroconversion rates of 98% for measles, 95 % for mumps and 99% for rubella. Two doses of MMR vaccine for all

older than 12 months is recommended.

HPV vaccine

27 % of new cervical cancer cases of world are in india.

Harald zur hausen received a nobel prize for his discovery of HPV causing cervical cancer. HPV is a necessary cause of cervical cancer .75 % of cervical cancer is caused by HPV 16 and 18. 90 % of anogenital warts are caused by HPV 6 and 11. Highest prevalence of HPV infection is in the age group 24 to 29 yrs. 75 % of sexually active men and women have been exposed to HPV. Males and females appear to be equally affected. Insetive intercourse represents the most efficient method of infection. Most of the HPV infections are transient and will clear on their own. However persistent infection with high risk HPV is associated with the development of malignant and precursor lesions.

Clinical trials of quadrivalent and bivalent HPV vaccines show efficacy of 90-100 %.

These vaccines are composed of virus like particles derived from non infectious outer capsid protein ,which induces an immune response. The vaccines are non infectious. Immune response is several fold higher than with natural infection. The vaccines are well tolerated. The vaccines can be given in the age group 9 to 45 yrs. The dosage schedule is 0,2 and 6 months. Priming with the first dose, a boost with the second dose and higher long term titres from the third dose. Only 2 doses are given in the age group 9 to 12 yrs.

American college of physicians recommends use of HPV vaccine among females with a history of abnormal PAP smear or known to be HPV positive or lactating and immunocompromised . Paps smear screening for cervical cancer should continue at recommended intervals.

Introduction to Prenatal & Perinatal Psychology

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Prenatal and Perinatal Psychology explores the psychological and psychophysiological effects and implications of the earliest experiences of the individual, before birth (prenatal), as well as during and immediately after Childbirth (perinatal) Psychology. Birth Psychology explores the development from conception through early infancy and the profound influence of this primary period across the lifespan.

Pre- and perinatal psychology were introduced by Otto Rank, a student, and colleague of Sigmund Freud. Dr. David Chamberlin, a renowned psychologist said, "The womb is a classroom and every baby must attend."

Therefore, Prenatal and Perinatal Psychology or Bonding is a must to be acknowledged by practicing OB-GYN specialist and by the parents. We as the healthcare providers need to enlighten the expecting parents about how the baby develops in the 9 months and how the mothers' mental health, stress level, and environment can have an impact on the development of the baby inside the womb.

Ethics Concern

Ethics in pre- and perinatal psychology education consists integrity, compassion, and knowledge of ethics. Pre- and perinatal psychology educators in the field of PPN are connected by ethics that supervise childbirth education. We as PPN educators respect the pre- and perinatal psychology philosophies of cognizance, prenatal sentient of babies, the mother-baby bond and connection, conception, pregnancy, birth, breastfeeding, and parenting as it has a lifelong impact on the developing baby and adult life. It is important for PPNE educators to

gain trust and faith of the individuals and to be aware of the professions chore, beliefs, ethical codes and ethical criterions and practice in a manner persistent with them.

Fetal Behavior/ Fetal Psychology-

The fetus is continually active in and reactive to its environment. Research suggests the behavior of the fetus is important for its development both before and after birth (Hepper, 1996), ensuring its survival and beginning its integration into the social world. Research has demonstrated that the fetus has considerable sensory abilities. It is argued that maternal anxiety influences the functioning of the maternal hypothalamic-pituitary- adrenal axis, which in turn influences fetal brain development, resulting in the subsequent poorer psychological and behavioral performance. Cortisol is the link between prenatal stress and infant outcomes.

By nine weeks, a developing fetus can hiccup and react to loud noises. By the end of the second trimester it can hear. Just as adults do, the fetus experiences the rapid eye movement (REM) sleep of dreams. The fetus savors its mother's meals, first picking up the food tastes of a culture in the womb. Among other mental feats, the fetus can distinguish between the voice of Mom and that of a stranger, and respond to a familiar story read to it. Even a premature baby is aware, feels, responds, and adapts to its environment. Just because the fetus is responsive to certain stimuli doesn't mean that it should be the target of efforts to enhance development. Sensory stimulation of the fetus can in fact lead to bizarre patterns of adaptation later on.

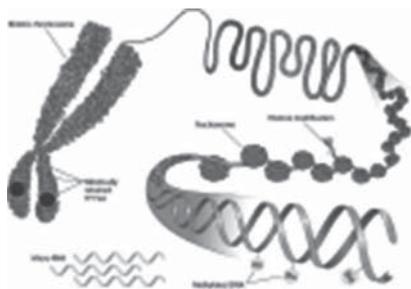
By 13- 15 weeks a fetus' taste buds already look like a mature adult's. At 24 or 25 weeks, the fetal responds to the sounds around it. Fetal Vision is the last sense to develop. The fetus displays the same kind of primitive learning, known as habituation, in response to its mother's voice. DeCasper discovered that within hours of birth, a baby already prefers its mother's voice to a stranger's, suggesting it must have learned and remembered the voice from its last months in the womb.

Role of Epigenetics

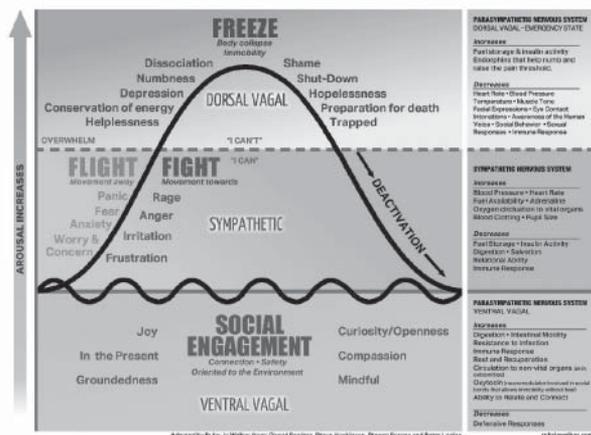
Epigenetics is the study of heritable changes in gene expression (active versus inactive genes) that do not involve changes to the underlying DNA sequence — a change in phenotype without a change in genotype — which in turn affects how cells read the genes. Epigenetic change is a regular and natural occurrence but can also be influenced by several factors including age, the environment/lifestyle, and disease state.

A mother's diet may adjust epigenetic marks that attach to her child's DNA, potentially increasing the odds that he or she will develop ADHD. It is found that that eating sweet and fatty foods during pregnancy were linked to higher DNA methylation of IGF2 in children who had early-onset conduct problems.

Post-translational modifications of **histones** are the subject of intensive investigations with the aim of deciding how they regulate, alone or in combination, chromatin structure, genomic stability, and gene expression. Major epigenetic programming events take place during gametogenesis and fetal development and are thought to have long-lasting consequences on adult health.



In 1994, **Stephen Porges proposed the Polyvagal Theory** specifies two functionally distinct branches of the vagus, or tenth cranial nerve. the primitive branch elicits immobilization behaviors, whereas the more evolved branch is linked to social communication and self-soothing behaviors. Providing confirmatory data for the Porges "Social Engagement System" model. Low vagal activity has been noted in prenatally depressed mothers (and prenatally angry and anxious mothers) and their infants, as well as in children with autism. These studies highlight the relations between vagal activity and the social behaviors of attentiveness, facial expressions, and vocalizations. Thus, if the social system is not activated, it can have adverse influences on the baby within the womb.



The **Adverse Childhood Experiences Study** from Ann Weinstein and **Peter Levine** revealed beyond the trauma of healing and resiliency. ACEs are traumatic or stressful events comprising exploitation and negligence.

Fetal death: Fetal mortality associated with adolescent pregnancy may come from ACEs rather than adolescent pregnancy.

Pregnancy consequences: Every ACE a mother goes through during early childhood is linked to reduced birth weight and gestational age of her baby at birth.

Bonding and Attachments-

Attachment theory in psychology originates with the seminal work of John Bowlby (1958). Attachment theory explains how the parent-child relationship emerges and influences subsequent development. John Bowlby, working alongside James Robertson (1952) observed that children experienced intense distress when separated from their mothers.

From a psychological point of view, the antenatal period and the early days and months with a new baby are all about adjustment, changing identity, and then parents getting to know their baby as an individual and building relationships together. The antenatal 'attachment' that is referred to as developing during pregnancy between the mother and the growing fetus.

Conclusion: Through a collaborative effort of mental health care professionals and medical care providers, the mother's attachment patterns, abilities to self-regulate her infant, and her need for various amounts of social and educational support can all be examined, services tailored to address those needs. Maternal stress and anxiety during pregnancy has been associated with shorter gestation higher incidence of preterm birth, smaller birth weight and length, increased risk of miscarriage, increased risk of preclampsia and birth defects. Thus, with constant care with regular caregivers throughout the four trimesters and beyond can promote safety and healing for the woman who has experienced stress trauma.

References

- DiPietro, J.A. (2004). The role of maternal stress in child development. *Current Directions in Psychological Science*, 13(2), 71-74.
- Curt A Sandman, Elysia Pogg Davis Neurobehavioral Risk Is Associated With Gestational Exposure to Stress Hormones *Expert Rev Endocrinol Metab.* 2012; 7(4):445-459.
- Huizink, A.C., Mulder, E.J.H., Buitelaar, J.K. (2004). Prenatal stress and risk for psychopathology: Specific effects or induction of general susceptibility? *Psychological Bulletin*, 130(1), 115-142.
- Andersen, S. L. (2003). Trajectories of brain development: point of vulnerability or window of opportunity? *Neuroscience and Biobehavioral Reviews*, 27(1-2), 3-18.
- Gluckman, P.D., & Hanson, M. A. (2004). Living with the past: Evolution, development, and patterns of disease. *Science*, 305(5691), 1733-1736.

Atosiban – A boon in preterm labour

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Introduction

Worldwide pre-term birth is a major obstetric challenge and it affects approximately 5%-18% of all newborn babies. It's a global crisis as every 30 seconds a pre-mature baby dies! Sadly, this is despite the fact that 70 % of all prematurity related deaths are preventable. The Indian scenario is worse in that we contribute around 24 % to the world's pre-term birth burden. 30 % of all pre-term births are below 30 weeks gestation and this cohort of babies need higher cost and superior health care infrastructure. Scientifically speaking, the Pre-term Parturition Syndrome stands as a poorly understood biochemical process even today. There is conflicting evidence about various predictors and interventions and this lack of clarity on the subject reflects in its poor outcome.

We need to develop tools for screening and early diagnosis in order to optimize the management strategies for prevention and treatment of preterm labour. Our newest tool in the armamentarium for combating pre-term birth is Atosiban that has made a huge impact on our clinical practice. Atosiban has shown great promise in delaying pre-term births and permitting prolongation of pregnancy and fetal growth.

Pharmacology of Atosiban



Atosiban is a synthetic peptide which acts as a competitive antagonist of human oxytocin receptors in the myometrium and decidua of the uterus. It blocks the activation of oxytocin resulting into decrease in the frequency of uterine contractions and tone of uterine musculature. It has a rapid onset of action and achieves uterine quiescence within 10 minutes. It mainly acts in the phase 2 and phase 3 of parturition where in there is rapid rise in the number of oxytocin receptors.

A steady state plasma concentration of Atosiban is reached within one hour of the start of infusion. Plasma protein binding of Atosiban is around 47% in pregnant women and terminal half-life of about 1.7 ± 0.3 hours.

Atosiban has high uterine specificity and has got no reports of any adverse effects. However, it is occasionally associated with nausea, hyperglycemia, headache, dizziness and palpitations. It crosses the placenta but there has been no untoward fetal complications reported till date. Only a small amount of metabolite is excreted in urine and hence renal impairment is not likely to warrant a dose adjustment. It is not associated with cytochrome P450 mediated drug-drug interactions. However, it should be used with caution in patients having impaired hepatic function. There has been no interaction between Atosiban and Betamethasone or Dexamethasone. Atosiban has no effects upon breast feeding. Thus, with its proven efficacy and safety profile; the Royal College of Obstetricians and Gynecologists recommended Atosiban as the first line agent in the management of pre-term labour.

Therapeutic Indications of Atosiban

- Regular uterine contractions of at least 30 seconds duration at a rate of ≥ 4 per 30 min
- Cervical dilatation of 1-3 cm and effacement of $\geq 50\%$
- Gestational age from 24 until 33 completed weeks
- Normal fetal heart rate

Atosiban intravenous preparation comes in the form of 6.75mg/0.9 ml and 37.5 mg/ml. It is stored at a temperature of 2-8 °C. There should not be any particulate matter and discoloration prior to administration. Our institutional use is as given in the Table1.

Table1: Dosage of Atosiban

Step	Regimen	Dose	Infusion rate	Duration
1	6.75 mg in 0.9 ml	6.75 mg	Bolus	1 min
2	37.5 mg in 5 ml (56.25 mg in 7.5 ml)+ 42.5 ml of 0.9% Normal Saline	56.25 mg	16 ml/hr (300µg/min)	3 Hrs
3	37.5 mg in 5 ml (56.25 mg in 7.5 ml)+ 42.5 ml of 0.9 % NS	56.25 mg	5.3 ml/hr (100 µg/min)	45 Hrs

Contraindications of atosiban

- PPRM > 30 weeks gestation
- Abnormal fetal heart rate
- Ante-partum haemorrhage
- Intra-uterine fetal death
- Severe pre-eclampsia & eclampsia
- Hypersensitivity reactions

As per the post-marketing literature issued by the manufacturers, there have been reported incidences of dyspnoea and pulmonary edema with concomitant use of Atosiban and Nifedipine or Ritodrine in multiple pregnancy. However, we have not encountered this complication in our experience.

Authors' Experience with Atosiban

Various studies in literature have shown the success rate of Atosiban to be around 78% in arresting pre-term births. Although Ritodrine is a very effective tocolytic agent but its use requires strict supervision; otherwise there are chances of complications like pulmonary edema. Both Atosiban and Nifedipine are found to be equally effective as tocolytics but the safety profile and compliance of Atosiban is far better than Nefidipine.

At our hospital, total institutional cost of Atosiban use per patient comes to around Rs 43,000. Thus, there remains an economical hindrance in the widespread use of Atosiban in our country. Subsidy by the government for such a critical medicine will definitely mitigate the socio-health problem like pre-term birth to some extent.

Our institute has the unique distinction of looking after a large number of IVF pregnancies (More than 5500 IVF babies so far). Due to prior multiple cervical interventions; we encounter a lot more pre-term labour and PPRM in this cohort! Our failures and success have made us understand a more prudent and pragmatic approach in dealing with the challenge of pre-term births.

We advocate a strict campaign against antenatal bacterial vaginosis (vaginal pH and clue cells in vaginal discharge smears) and any other non-specific vaginal infections. We also believe in regular monitoring of cervical length by transvaginal ultrasound in the ante-natal OPD in women deemed to be high risk for pre-term birth. We also follow history indicated, ultrasound indicated or emergency encirclage in established pre-term labour cases along with Atosiban. Antenatal corticosteroids are given after 24 completed weeks and subsequent single repeat dose if required. Till 32 completed weeks, we closely monitor such pregnancies in the hospital and ensure compliance of bed rest.

We have used Atosiban in over 100 preterm labour and PPRM patients so far and found it to be very safe and cost-effective first line tocolytic agent. From our experience, we can label it as an ideal tocolytic in the current practice of pre-term birth management. Its use has been approved in India since 2014; however, it still awaits the approval of USFDA!

With an expert team of neonatologists on our side and Atosiban in our armamentarium, we have been able to salvage a large number of very precious babies who were threatening to be born too early! We thank Atosiban for bringing a new ray of hope for women threatening to deliver prematurely.

TOLAC: Experience and Practice Points

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In the present context of increasing rate of cesarean delivery the issue of TOLAC and VBAC has again emerged in prominence. The cesarean delivery (CD) rates are different in different countries i.e. 31.8% in USA, 50% in China & 80% in Brazil. In India also rates are on rise. Also there is wide interstate variation. Also there is marked variation in CD rates in pvt. and Govt. setups. Even at last FIGO in Vancouver there was no consensus on reasonable CD rates WHO recommends a rate of 10-15%.

After reviewing the literature and experiencing the two modes of deliveries for a long time I can say that there is a definite place for TOLAC and VBAC. According to latest ACOG guidelines the patients of CD should be offered VBAC if they fulfill the laid down criteria as VBAC is not without risk. ACOG even recommends VBAC to be offered in selected cases of 2 previous LSCS. In the last century the saying was once a cesarean always a cesarean. Although some obstetrician still believe in this but now the saying should be "Once a cesarean, next delivery in a well equipped place with all the facilities of emergency cesarean". Our aim is not just to accomplish a vaginal delivery in a previous scarred uterus but to give the mother a healthy baby and baby a healthy mother.

So our rates of Maternal Mortality and morbidity and perinatal mortality and morbidity should be equal to primary vaginal or CD delivery. In this context I would say that no attempt of TOLAC & VBAC should be done if the place is not well equipped to deal with VBAC namely good monitoring, adequate staff and availability of facilities of emergency LSCS and complication, like OT, anesthetists, Blood bank, Expertise Pediatrician, Nursing etc.

Prerequisites for VBAC & TOLAC:

As ACOG recommends that VBAC to be offered to pt who full fill the prerequisite criteria like:

- Previous one scar
- Informed Consent.
- Adequate Pelvis
- Interval of 12-18 months after first LSCS.

Contraindications:

Also contraindication should be ruled out like

- Previous classical or inverted T scar
- Contracted Pelvis
- Previous hysterectomy or my omectomy
- Any obstetrical or medical complications

Also it should be noted that VBAC is more successful if it follows spontaneous labour. But induction is not contraindicated

Methods of inductions in previous cesarean

- Preferred method is Foley's bulb for 12 hours
- Dinoprostone 0.5mg gel intracervical
- Misoprostol should not be given
- Oxytocin if required for augmentation in reduced doses

Scar Rupture Incidence:

We should also be well aware of scar rupture rates like

- Previous one LSCS – 0.2-0.9%
- Previous two LSCS – 0.2-0.9%
- Classical CS - 2-9%
- Inverted T or J- 4-9%
- Lower Vertical Scar – 1-7%
- Prior uterine rupture
 - Lower segment – 2-6%
 - Upper segment – 9-32%

Also one should always make sure regarding the factors which can make a surgical scar weak like, hematoma, improper apposition, less experienced surgeon, sepsis, extensions or excessive stretching of lower segment etc.

Monitoring:

Also monitoring should be very carefully done

- Routine care
- Pantograph
- Continuous EFM
- Epidural analgesia is not contraindicated
- Watch for signs of scar rupture.

Unexplained Maternal tachycardia, Pain at scar site, Decelerations of FHS, Scar tenderness, Fresh bleeding PV, Bladder tenesmus, Hematuria etc.

A study of TOLAC in 150 patients was carried out at SGMH with a success rate of approximately 60%

Happy VBAC

Fetomaternal Risks and Monitoring in Gestational Diabetes Mellitus

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Prevalence of diabetes is increasing in India and it is becoming common in younger age group. Depending on the population studied and the diagnostic test employed, prevalence of Gestational Diabetes Mellitus (GDM) may range from 2.4 to 21 per cent of all pregnancies. Number of women with GDM is proportionate to the number of women with type 2 diabetes mellitus (T2DM) in any population. Hyperglycemia during pregnancy is a common medical condition associated with high maternal and fetal/neonatal morbidity along with long term implications of developing non communicable disease for both the mother and the child.

During pregnancy, maternal hyperglycemia stimulates the fetal pancreas to produce excess insulin resulting in fetal hyperinsulinemia as early as 11-13 weeks. This results in intrauterine programming of the fetus such that even when the maternal influence is withdrawn, the fetal pancreas will not function normally. Children exposed to hyperglycemia during pregnancy suffer from childhood obesity, impaired glucose tolerance and during adult life develop T2DM, metabolic syndrome and cardiovascular diseases.

Fetal risks:



Macrosomia resulting from congenital malformations, substrate deprivation due to maternal vascular disease, maternal hyperglycemia leads to fetal hyperinsulinemia resulting in excessive somatic growth /macrosomia. Macrosomia affects each body organ except brain. Macrosomic babies have excessive fat deposition on shoulders and trunk which predisposes to shoulder dystocia /caesarean delivery. Risk of macrosomia is high if maternal blood glucose levels are persistently >130. Macrosomic babies have high chances of developing diabetes in future.

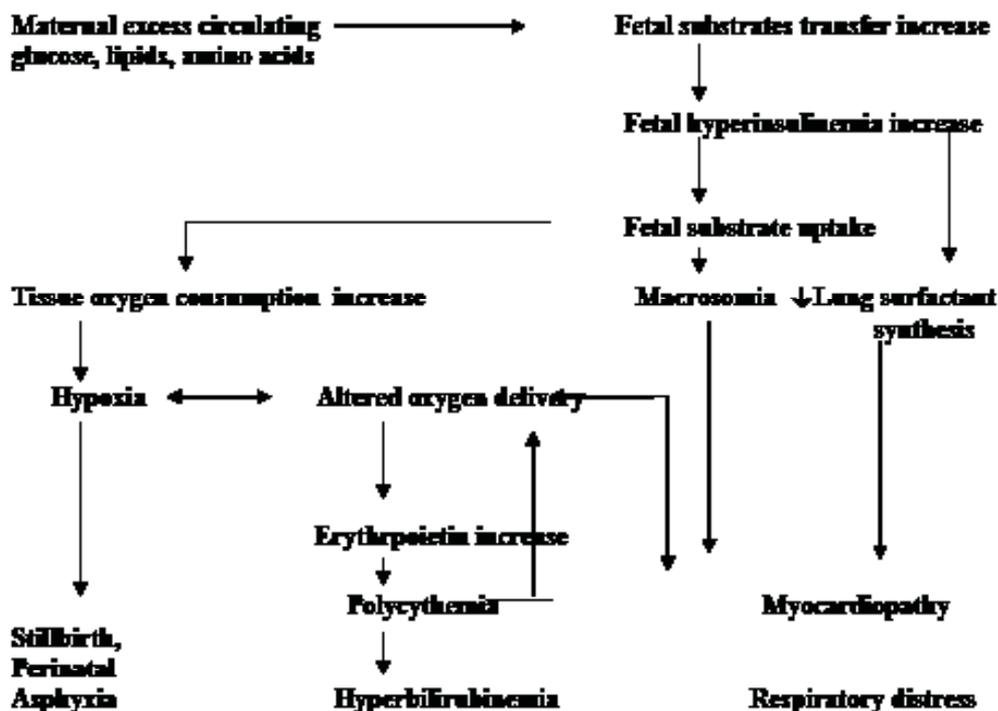
Unexplained fetal demise is 4 times higher in Type I diabetes .Unexplained still births are due to non identification of obvious placental insufficiency, abruption,fetal growth restriction ,oligohydraminos. These babies are LGA and die usually after 35 wks of gestation

Hydraminos is a result of increased amniotic fluid glucose concentration and also fetal polyuria due to fetal hyperglycemia .Mostly associated with high HbA1c level in third trimester.

Congenital malformations are more common in women with overt diabetes. Poorly controlled diabetes preconceptionally and early in pregnancy as shown by increased HbA1c at first prenatal visit is associated with increased rate of malformations due to altered cellular lipid metabolism, excess production of toxic superoxide free radicals and activation of programmed cell death. Birth defects include cardiovascular, musculoskeletal, urogenital, CNS, gastrointestinal, chromosomal, and rarely caudal regression.

Early fetal loss especially if HbA1c >12 % or preprandial glucose is persistently > 120 mg/dl

Figure 1: Pathophysiology of adverse perinatal outcome in GDM is shown below.



Neonatal effects

Respiratory distress syndrome.

Hypoglycemia (<45 mg/dl): chronic maternal hyperglycemia induces fetal beta islet cell hyperplasia leading to hypoglycaemia after delivery. Can be prevented by frequent blood glucose measurement and early feeding practices.

Hypocalcemia (total serum calcium < 8 md/dl) due to calcium-magnesium economy abberations, asphyxia and preterm birth.

Hyperbilirubinemia and polycythemia: Hyperglycemia mediated increase in maternal affinity for oxygen and fetal oxygen consumption leads to hypoxia which along with insulin like growth factors lead to increased fetal erythropoietin levels and red cell production ultimately causing polycythemia (Hct 65 to 70 %). Polycythemia

leads to hyperbilirubinemia.

Cardiomyopathy: In first trimester fetal diastolic dysfunction and in third trimester fetal interventricular septum and right ventricular wall thickening is seen in foetuses of diabetic mother. Infants of diabetic mother have hypertrophic cardiomyopathy affecting mainly interventricular septum and severe cases leading to obstructive cardiac failure. Mostly newborns are asymptomatic at birth and hypertrophy resolves in month after delivery. However fetal cardiomyopathy may progress to adult cardiac disease.

Long term effects- These children are more prone to develop childhood obesity, diabetes and metabolic syndrome later in life. Breast feeding is associated with reduced risk of type 2 diabetes.

Maternal risks of GDM include increased rate of macrosomia, polyhydramnios, preterm rupture of membranes, preterm deliveries and hypertensive disorders during pregnancy. There are increased chances of fetopelvic disproportion, prolonged labour and an increased rate of instrumental/caesarean delivery. Postpartum haemorrhage, birth trauma and shoulder dystocia are also common. Two third of the women with GDM will have recurrence in subsequent pregnancy and 50% may develop T2DM, as well as other aspects of the metabolic syndrome, such as obesity, cardiovascular morbidities later in life.

Evidence reveals that fetomaternal risks can be considerably reduced through preventive actions and monitoring for both the mother and the offspring during pregnancy and later on in life. The US Diabetes Prevention Program (DPP) provided evidence that lifestyle change works for women post-GDM, their T2DM risk reduced by 50% and the effect of diabetes prevention continued 10 years after lifestyle intervention.

Glycemic targets in pregnancy.

The goals for glycemic control for GDM are based on recommendations from the Fifth International Workshop-Conference on Gestational Diabetes Mellitus and have the following targets for maternal capillary glucose concentrations:

Preprandial < 95 mg/dL (5.3 mmol/L)

One-hour postmeal < 140 mg/dL (7.8 mmol/L) or

Two-hour postmeal < 120 mg/dL (6.7 mmol/L)

The American College of Obstetricians and Gynecologists (ACOG) recommends the following targets: Fasting- 90mg/dL, preprandial-105 mg/dL, 1-h postprandial -130 to 140 mg/dL, and 2-h postprandial-120mg/dL.

Plasma glucose monitoring

After diagnosis of GDM, woman should be admitted for 7 point blood sugar profile ☒ Medical nutrition therapy ☒ If Plasma glucose is not controlled in 2 weeks ☒ Insulin therapy should be started.

Once plasma glucose targets are achieved, monitor with 3-4 samples/day- including FBG + 2-3 post meal (FIGO 2015 /ACOG)

Postprandial glucose levels, are associated with adverse pregnancy outcomes in patients with hyperglycemia in pregnancy (ADA 2017, FIGO 2015)

ANC every two weeks with blood sugar profile report or earlier if values are deranged

Termination of pregnancy:

GDM on diet : 40 wks

GDM on insulin / IDDM : 38 wks

Associated hypertension : may need earlier termination

Antenatal steroids if indicated

(NICE 2008)

Postpartum/interconceptional monitoring with 75 gm OGTT is done between 6-12 weeks after delivery to check for impaired/deranged plasma glucose every year so that preventive lifestyle measures may be taken in consultation with a physician and dietician.

Thus, GDM provides a unique opportunity for the development, testing and implementing of clinical strategies

for prevention of T2DM. Timely action in this regard by screening of all pregnant women for glucose intolerance, achieving and maintaining normoglycemia through life style management may prevent the vicious cycle of transmitting diabetes to the next generation.

Dilemmas in the Management of Ectopic Pregnancy

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Ectopic pregnancy occurs with an incidence of about 1% of all pregnancies but the incidence is probably higher in pregnancies following assisted reproductive techniques. The significance of ectopic pregnancy as a health problem lies in the high morbidity and mortality usually due to a delay in diagnosis. High index of suspicion is the key to early diagnosis. Dilemmas and controversies exist in the role of medical management of ectopic pregnancy, in the route of surgery and finally in choosing between salpingotomy and salpingectomy in unruptured ectopic pregnancy. Medical management with systemic methotrexate has a high success rate and seems to work best when the ectopic pregnancy is less than 3cm in size, the serum b-hcg is less than 3000 iu/ml, there is no haemoperitoneum and the pregnancy is not live. Laparoscopy is the preferred route of surgical treatment; laparotomy is reserved for the haemodynamically unstable patients. The choice of salpingectomy and salpingotomy has long been a matter of controversy. Theoretically, salpingectomy may lead to lower future intrauterine pregnancy rates compared to salpingotomy, while the latter may lead to a higher risk of future ectopic pregnancy. Salpingotomy also carries the risk of persistent trophoblast. However, current evidence suggests that the future intrauterine pregnancy rates are similar with both the procedures. Hence, salpingectomy should be the operative procedure of choice if the contralateral tube is healthy.

Non Technical Skills – Are they important for Doctors ??

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What are non-technical skills?

Non-technical skills are cognitive (e.g. decision making) and interpersonal (e.g. teamwork) skills. Analyses of adverse events in surgery have revealed that many underlying causes originate from behavioural or non-technical aspects of performance (e.g. communication failures) rather than a lack of technical expertise. Therefore, technical skills appear to be necessary but not sufficient to ensure patient safety in the operating theatre. Paying attention to non-technical skills such as team work, leadership, situation awareness, decision-making, and communication

will increase the likelihood of maintaining high levels of performance over time.

In surgery, it has been found that medicolegal cases are not attributable to deficient technical skills alone. The 2010 Scottish Audit of Surgical Mortality found that **4.3%** cases are due to technical errors during the surgery. The rest are due to poor decision-making or deficiencies in teamwork in the operation theatre. In a retrospective review of 258 closed malpractice claims, **systems factors** contributed to error in **82%** of cases, whereas **communication breakdown** was responsible for **24% of them**. In UK, there is an introduction of assessment of **NON Technical Skills of Surgeons (NOTSS)**, which has been incorporated by RCOG also, to improve the communication skills of surgeons and gynaecologists.

NOTSS skills taxonomy--

1. **Situation Awareness:** Gathering information, Understanding information **and** Projecting and anticipating future state
2. **Decision Making Elements :** Considering options, **Selecting and Communicating options and Implementing** and reviewing decisions.
3. **Communication and Teamwork:** Exchanging information among team members and Establishing a shared understanding.
4. **Leadership :** Co-ordinating team activities, Setting and maintaining standards, Supporting others

And Coping with pressure

Empathy: It is defined as the ability of a person to see things from other's perspective. It requires strong communication skills for the person to understand other's perspective and an equally strong imagination to visualise himself in other's position. This skill forms the basis for a positive patient-practitioner relationship.

Strong communication skills: The practitioner should have the ability to listen to the patient very carefully and decipher the symptoms through a critical analysis process. The ability to read between the lines is very crucial in managing patients.

Ability to work in teams: Delivery of healthcare is increasingly becoming a team effort, with patient satisfaction at the centre.

Leadership Skills: All the practitioners and the support staff alike should have the ability to take stock of the situation in a crisis and manage it till it can be handed over to the right person.

Doctors may improve their non technical skills which would help in improving Doctor – Patient communication and also help in better results as far as treatment is concerned, as well as in preventing law suits.

Becoming adept at non-technical skills literally changes lives for the better—patients' lives. As the great sage Yoda said, **"Do. Or do not. There is no try."**

Ten important Non Technical skills :

- **Empathy** – In the healthcare & criminal justice fields, you have to be able to empathize and/or sympathize with the difficult situations faced by others.
- **Communication Skills** – Being able to communicate well with patients and colleagues is vital.
- **Be a Team Player** – You're probably going to be part of a team; you need to be able to 'play nicely' with others and genuinely encourage & support your colleagues.
- **Dealing With Pressure** – Pressure is a daily part of many healthcare careers; you have to be able to handle it, and thrive on it.
- **Strong Work Ethics** – You will often have to go 'above & beyond' in the care and service of others – many healthcare careers are not 9-5 jobs.
- **Positive Mental Attitude** – There will be difficult days ahead; you have to be able to see the bigger picture otherwise this field could bring you down.
- **Flexibility** – Can you cover an extra shift? Can you stay late? Again, these aren't 9-5 career fields.
- **Time Management** – Important in any career, but lives could literally depend on your timeliness.
- **Self-Confidence** – Nobody wants to think they are being cared for by a novice, so you need to project self-confidence in your abilities no matter how experienced you actually are.

- **Dealing With Criticism** – You don't know everything, and in healthcare things are always changing. You need to have the ability to accept and learn from criticism.

References:

1. Effie Dearden, Edward Mellanby, Helen Cameron & Jeni Harden: Centre for Medical Education, University of Edinburgh, Chancellor's Building, 49 Little France Crescent, Edinburgh and Centre for Population Health Sciences, University of Edinburgh
2. **Does teaching non-technical skills to medical students improve those skills and simulated patient outcome?** Vera Hagemann,^{1,*} Frank Herbstreit,^{2,*} Clemens Kehren,² Jilson Chittamadathil,² Sandra Wolfertz,³ Daniel Dirkmann,² Annette Kluge,^{1,*} and Jürgen Peter Int J of Med. Edu. -2017
3. Ratan, D. S. (2012, March). Express healthcareschooling doctors in soft skills.
4. Dutta, R. (2008, March). Express healthcaremeeting manpower shortage in healthcare industry.

HPV Biomarker Triage in Current Screening Paradigms

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A biomarker is a characteristic that can objectively be measured as an indicator of normal or pathogenic processes or a pharmacological response to a therapeutic intervention. It is generally found in blood/ body tissues/ body fluids (blood, urine) as sign of normal or abnormal processes eg cancer. It can be measured by genetics, proteomics, cellular or molecular substances. An ideal biomarker would have 100% sensitivity and specificity but none of the currently available biomarkers achieve this¹. For any biomarker to be useful, the test result has to influence clinical management. This could be by means of: (a) direct referral for treatment, (b) referral to colposcopy to confirm precancer on biopsy, (c) increased surveillance through more intensive screening, (d) release to routine screening. While biomarker discovery continues in multiple directions, current biomarker candidates can be broadly categorized into two groups, viral markers and cellular markers.

HPV infection happens shortly after sexual initiation. Most infections clear spontaneously, but a few carcinogenic HPV infections may persist and initiate oncogenic changes in epithelial cells at the cervical transformation zone. In a small fraction of cases, these persistent abnormalities may progress to invasive cervical cancer in the absence of early detection and treatment. Viral and cellular biomarkers indicating key steps of the functional progression model (HPV infection, precancer and invasive cancer) have been discovered, with some currently in early discovery stages, while others have already been commercialized².

Viral markers include HPV DNA, HPV E6/E7 mRNA, HPV proteins and serum antibodies to HPV 16 proteins. Cellular markers are p16INK4a / Ki67, Mini chromosome maintenance (MCM), Topoisomerase II- α (TOP2A), ProExC antibody (TOP2A/MCM), DNA Methylation, Aneuploidy, chromosome imbalances, Telomerase, Survivin and Cyclins.

HPV DNA: there are two main methods for detection – (a) Direct Hybridization (eg, Southern blot, dot blot, in situ hybridization) and (b) Amplification (polymerase chain reaction [PCR]). HPV DNA testing should only be done by one of the FDA approved tests.

HPV E6/E7 mRNA: High-risk HPV E6 and E7 proteins immortalize and malignantly transform infected cells. They act by inhibiting two host anticancer proteins, p53 & pRB. While HPV E6/E7 mRNA expression found in virtually all HPV-positive cancer cases, in CIN cases, the positivity rate increases with the severity of disease on cytology

& histology. Optimal cut-off value of ≥ 567 copies/ml has been determined using ROC. Although it has no role in primary screening, as triage in HPV positive cases it has the ability to reduce colposcopy referral. It has a stronger correlation with cervical disease than detection of HPV DNA alone.

Dual Staining - p16/Ki-67 (CINtec PLUS™): p16 is surrogate marker of HPV E7-mediated pRb catabolism, which is suggestive of transformation of the cervical mucosa, while Ki67 is proliferation marker confined to the parabasal cell layer, whose expression in the stratified squamous epithelium in CIN lesions correlates with the extent of disordered maturation. In a large multicentric study, dual-stained cytology more sensitive than Pap smear at all ages, (86% vs 68%) with comparable specificity (95% both)

HPV is more sensitive than dual-stained cytology in women over 30 (93% vs 84%), but less specific (93% vs 96%). Thus the potential role of dual-stained cytology lies in screening younger women where HPV testing has its limitations³.

ProExC assay (Becton-Dickinson) is based on an antibody cocktail recognizing both MCM2 and TOP2A proteins. It can be potentially used for triage of HR-HPV positive women to increase specificity (98.3% vs. 85.0%) and PPV (41.7% vs. 9.3%) compared to HR-HPV test alone⁴.

DNA methylation is crucial in activating and silencing genes during normal development, and its disruption contributes to carcinogenesis. The promoter regions of E6 and E7 are more frequently methylated in the later stages of tumor progression and the methylation level has been correlated to E6 mRNA expression. It has a stronger association for women > 30 years. Methylated biomarkers in combination may be clinically useful for triage of women with HR-HPV infection as aberrant methylation can be detected in cervical smears up to seven years prior to diagnosis indicating promise as a biomarker for cervical cancer⁵.

Triage using molecular markers of HPV can be cytology based, HPV testing based or after colposcopy & biopsy. The high sensitivity of the HPV DNA test, resulting in higher protection, is counterbalanced by its lower specificity, thereby increasing the need for new algorithms and biomarkers aimed at controlling false positives, over-diagnosis, and overtreatment. Indeed, increasing specificity of the screening algorithm is even more relevant when the HPV DNA test is implemented as the primary screening test and in the vaccinated population. To date, the only widely recommended test for triaging HPV-positive women and reducing the number of colposcopies in HPV-based screening is cytology. However, the new biomarkers are promising as secondary triage for HPV positive women, esp those linked to the overexpression of the E6/ E7 viral oncogenes. The activation of E6/E7 can be detected directly through the presence of the messenger RNA (mRNA) of the viral oncogenes or indirectly through the identification of the accumulation of the p16INK4a protein in the cell.

For triaging of borderline cervical smears (ASCUS-LSIL), the multicentric Primary ASC-US LSIL Marker Study (PALMS) showed the clinical usefulness and efficiency of triaging women with ASC-US or LSIL cytology results by p16/Ki-67 dual-stained cytology testing in over 27000 women.

References:

1. Dasari S, Wudayagiri R, Valluru L. Cervical cancer: Biomarkers for diagnosis and treatment. Clin Chim Acta. 2015; 445:7-11.
2. Sahasrabudhe VV1, Luhn P, Wentzensen N. Human papillomavirus and cervical cancer: biomarkers for improved prevention efforts. Future Microbiol. 2011;6(9):1083-98.
3. Ikenberg H1, Bergeron C, Schmidt D et al. Screening for cervical cancer precursors with p16/Ki-67 dual-stained cytology: results of the PALMS study. J Natl Cancer Inst. 2013;105(20):1550-7.
4. Depuydt CE, Makar AP, Ruymbeke MJ. BD-ProExC as adjunct molecular marker for improved detection of CIN2+ after HPV primary screening. Cancer Epidemiol Biomarkers Prev. 2011;20(4):628-37.
5. Louvanto K1, Franco EL, Ramanakumar AV. Methylation of viral and host genes and severity of cervical lesions associated with human papillomavirus type 16. Int J Cancer. 2015;136(6):E638-45.

The FIGO Gyn Cancer Management Smartphone Mobile Application

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The FIGO Gynecologic Oncology Committee has developed a smartphone application with a view to improving accessibility to information and having a standard management protocol for the management of gynaecological cancers.

The application is known as the **“FIGO Gyn Cancer Management App”** and is available for free download for android and iPhone users at the Google Playstore and the App Store respectively. Once downloaded, it can be used offline. The app is very user-friendly and provides access to latest staging, investigations and management for all gynaecological cancers. For ease of use, each site has a different color code and there is provision for bookmarks and saving recently visited pages.

The app was developed by the Gynaecology Oncology team from AIIMS, New Delhi and the Disease Management Group, Tata Memorial Hospital, Mumbai, have reviewed and collated various important guidelines in this application to provide pragmatic direction for different resource conditions. For each site, stage-wise management is laid out in flowcharts that explore all clinical scenarios (e.g., fertility preservation desired or not), different histopathological types and grades. Charts for both the investigations and the management are resource-based and users can understand what is preferable and what is acceptable management according to FIGO, and do what is available in their clinical context. The app is very useful for students, residents, gynaecologists, Gynae oncologists and all persons involved in the management of women with gynaecological cancers.

Borderline Ovarian Tumour

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Pertinence of topic:

Data suggests incidence is increasing.

One-third of women diagnosed with a borderline ovarian tumor are younger than 40 years of age. The majority of cases are diagnosed at stage I.

Issues to be discussed:

- Unilateral ovarian tumor - complete formal staging, is it necessary ?
- Role of routine hysterectomy in staging

- Role of routine lymphadenectomy in staging
- Cystectomy vs USO
- Radical fimbriectomy
- Bilateral tumors
- Ultraconservative approach
- Sparing in advanced stage
- Sparing in recurrence
- Oncological outcomes
- Reproductive outcomes

Systematic Lymphadenectomy in Advanced Ovarian Cancer: The LION Trial

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The goal of cytoreduction in cases of advanced ovarian cancer is complete resection to no gross residual disease (R0) as this is known to improve survival outcomes¹. Panici et al, in a randomized controlled trial, had reported an advantage in progression free survival(7 months) but not in overall survival, for systematic pelvic and para-aortic lymphadenectomy (LNE) in women with no or small residual disease (0–10 mm) on primary cytoreduction². Retrospective analysis of prospective AGO phase III trials however, suggested a potential benefit in overall survival by removing clinically negative pelvic and para-aortic lymph nodes in women with complete resection of gross disease³.

LION – LYMPHADENECTOMY IN OVARIAN NEOPLASMS – is a prospective randomized trial designed to study differences in survival function with or without systematic pelvic and para-aortic lymphadenectomy, in women with advanced epithelial cancer of the ovaries, tubes, or peritoneum (FIGO IIB-IV). The women enrolled in this trial had clinically and radiologically negative pelvic and para-aortic lymph nodes, underwent primary R0 cytoreduction, and were randomized intraoperatively to lymphadenectomy (LNE) and no lymphadenectomy (No LNE) groups. Primary endpoint was overall survival and secondary endpoints were progression free survival, quality of life (EORTC QLQ-C30, OV 28) and number of resected lymph nodes. The women who underwent lymphadenectomy (LNE, n=323) had significantly more blood loss, postoperative infections, symptomatic and asymptomatic lymphocysts, re-laparotomy for complications and 60 day postoperative mortality, as compared to women who did not undergo lymphadenectomy (No LNE, n=324). There was no difference in overall survival (LNE 65.5 months vs No LNE 69.2 months, p=0.65, HR 1.057(0.833-1.341)) and progression free survival (LNE 25.5 months vs No LNE 25.5 months, HR 1.106 (0.915-1.338)) between the two groups. The authors concluded that the results of the study indicate, that systematic lymphadenectomy of clinically negative lymph nodes in cases of advanced ovarian cancer undergoing complete cytoreduction should be omitted, as it neither improves overall nor progression free survival despite detecting (and removing) sub-clinical retroperitoneal lymph node metastases.

References

1. Chi DS, Eisenhauer EL, Lang J, et al. What is the optimal goal of primary cytoreductive surgery for bulky stage IIIc epithelial

ovarian carcinoma (EOC)?GynecolOncol. 2006 Nov;103(2):559-64.

2. Panici PB, Maggioni A, Hacker N, Landoni F, Ackermann S, Campagnutta E, et al. Systematic aortic and pelvic lymphadenectomy versus resection of bulky nodes only in optimally debulked advanced ovarian cancer: a randomized clinical trial. J Natl Cancer Inst. 2005;97(8):560-6.
3. du Bois A, Reuss A, Harter P, et al. Potential role of lymphadenectomy in advanced ovarian cancer: a combined exploratory analysis of three prospectively randomized phase III multicenter trials. J Clin Oncol. 2010 Apr 1;28(10):1733-9.

Evaluation of a Patient with Vulval Lesion

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Vulval problems are always an enigma for the gynaecologists as we tend to consider all of them to be dermatological problems. A step-wise approach will help us diagnose most of the vulval conditions.

The vital step in evaluating a chronic vulval problem is taking a good history and performing a careful clinical examination. Diagnostic aids like visualisation with low magnification, cytology and colposcopy and biopsy are adjuncts in the diagnosis.

History:

Following points should be noted in history

- Presenting symptoms: The common presenting symptoms are pruritus, vulval lesion and Vulvodynia.
- Duration of symptoms: Short duration indicates an infective lesion, a chronic lesion per International Society for Study of Vulval Disease¹ is symptoms of ≥ 3 months.
- History of hay fever, asthma, eczema: as this could be associated with vulvar dermatitis²
- Vulval hygiene practices: A careful history of all treatments & medications tried should be taken as these patients have often tried various creams, douches, deodorants or simply excessive washing prior to presentation (Gayle O Fischer³, Maria-Grazia Marin et al⁴). These further aggravate the problem and need to be stopped prior to further investigation.
- Any generalised skin disorder e.g. dermatitis or psoriasis could be associated with vulval pruritus and should be excluded prior to further investigations.
- History of any chronic vaginal discharge may indicate chronic candidiasis.
- Psychosexual problems: Chronic vulval problems lead to dyspareunia, low mood and arousal failure^{5,6}.
- Associated medical problems: Lichen Sclerosus could be associated with autoimmune thyroiditis, uncontrolled diabetes, hypothyroidism and iron deficiency anaemia could be a cause of chronic vulval problems².

Examination: Careful inspection under good light is essential, 20-60% (Byrne et al⁵, Ai Ling Tan et al⁷) will have an abnormality which will be seen with the naked eye, the sensitivity is improved if a magnifying glass is used. Examination with naked eyes has a sensitivity of 84.6% and specificity of 85.9% in detecting a neoplastic lesion (unpublished data). Any lesion found on the vulva is described as per IFCPC classification

Cytology: A wooden spatula, cotton covered swab stick, no 15 disposable blade or a nylon brush could be used to take a vulval smear⁸ The advantages are a complete evaluation of vulval epithelium, is painless and has a high accuracy of detecting benign and neoplastic lesions⁸⁻¹⁴. Disadvantages are the thick epithelium which makes exfoliative cytology difficult.

Colposcopy: Coppleson and Pixley¹⁵ first described and classified the vulval lesions in 1992 based on the color, presence or absence of blood vessels, surface configuration or topography, whether multifocal or multisited. The junction between the glycogen bearing vaginal epithelium and keratin producing vulvar epithelium is considered at high risk for intra-epithelial neoplasia. Colposcopy should be done if a lesion is chronic, and has a thickened surface, however it has a high negative predictive value in excluding a neoplastic lesion and can be very reassuring.

Colposcopic visualization of the vulva is performed in the following sequence:

1. Application of normal saline
 2. Application of 5% acetic acid for 5 min
 3. Application of 1% toluidine blue for 1 min washed with 1% acetic acid.
- o **Acetic acid** coagulates the cytoplasmic and nuclear proteins of the squamous epithelium; areas of vulvar dysplasia undergo maximal coagulation due to the high content of nuclear proteins, the epithelium therefore appears acetowhite¹⁶. Since the vulvar skin has keratinized squamous epithelium, acetic acid needs to be applied for a longer time for 5 min (compared to 1min of the cervix).

Toluidine blue is a vital stain taken up by cell nuclei and rapidly fixed in such a way that it will not decolorize on exposure to acetic acid. Richart¹⁷ first proposed its use in cervical dysplasia; Collins¹⁸ later popularized it for detecting vulval lesions. The test is performed first by swabbing the area with 1% solution of Toluidine blue for 1-2 min and washing with 1% acetic acid; areas which retain the blue color (fine blue punctuation) should be the sites of biopsy.

• Vulvar Biopsy

Indications:

1. If a standard treatment of a seemingly benign dermatologic lesion proves ineffective.
2. Any area that is suspicious of dysplasia or malignancy

Technique: Lignocaine 1% is injected subepidermally with a 25 gauge needle (5-8 ml per site) and biopsy is taken with either a Keyes cutaneous punch, ophthalmic scissors (Dennerstein⁸) or Cervical punch biopsy forceps. Suturing the biopsy site (3-0 vicryl rapide) is rarely needed in case of persistent bleeding. Well circumscribed lesions are to be removed by excisional biopsy using a no 15 blade held at right angles to the skin surface and the defect closed with a figure of 8 sutures using 3-0 vicryl rapide or monocryl¹⁹. The excised tissue is placed epidermal side upwards on a small piece of absorbent cardboard and inverted into a small bottle of formalin solution and allowed to float on the surface.

References

1. Bornstein, Jacob MD, MPA¹; Bogliatto, Fabrizio MD²; Haefner, Hope K. MD³; Stockdale, Colleen K. MD, MS⁴; Preti, Mario MD⁵; Bohl, Tanja G. MD⁶; Reutter, Jason MD⁷; for the ISSVD Terminology Committee The 2015 International Society for the Study of Vulvovaginal Disease (ISSVD) Terminology of Vulvar Squamous Intraepithelial Lesions. *Journal of Lower Genital Tract Disease*: 2016;20(1):11-14
2. Royal College of Obstetricians and Gynaecologists (RCOG). The management of vulval skin disorders. London (UK): Royal College of Obstetricians and Gynaecologists (RCOG); 2011 Feb. (Green-top guideline; no. 58).
3. Fischer GO. The commonest causes of symptomatic vulvar disease: a dermatologist's perspective. *Australas J Dermatol*. 1996 Feb;37(1):12-18.
4. Marin MG, King R, Sfamini S, Dennerstein GJ. Adverse behavioral and sexual factors in chronic vulvar disease. *Am J Obstet Gynecol* 2000;183:34-8
5. Byrne MA, Walker MM, Leonard J, Pryce D, Taylor-Robinson D. Recognizing Covert Disease in Women with Chronic Vulval Symptoms Attending on STD Clinic: value of detailed examination including colposcopy. *Genitourin Med* 1989 Jan; 65(1): 46-49.
6. Sadownik LA. Clinical profile of vulvodinia patients. A prospective study of 300 patients. *J Reprod Med*. 2000 Aug; 45(8):679-84.
7. Tan AL, Jones R, Mcpherson G, and Rowan D, Audit of a Multidisciplinary Vulvar Clinic in a Gynecologic Hospital. *J. Reprod. Med*. 2000;45(8):655-658
8. Dennerstein GJ. Cytology of the vulva. *J Reprod Med*, 1988 Aug;Vol 33:703-704.
9. Dennerstein GJ. The cytology of the vulva. *J Obstet Gynaecol Br Commonw*. 1968 Jun;75(6):603-9
10. Levine T S, Rolfe K J, Crow J, Styles S, Perrett C W, Maclean A B, et al The use of cytospin monolayer technique in the cytological diagnosis of vulval and anal disease. *Cytopathology* 2001 Apr;20(2):379-95.
11. Jiménez-Ayala M, Jiménez-Ayala B. Terminology for vulvar cytology based on the Bethesda System. *Acta Cytol*. Jul-Aug 2002; 46(4): 645-50
12. Levine TS, Rolfe KJ, Crow J, Styles S, Perrett CW, Maclean AB, Reid WM. The use of cytospin monolayer technique in the cytological

- diagnosis of vulval and anal disease. *Cytopathology*. 2001 Oct;12(5):297-305.
13. Likes W. Feasibility study of liquid based cytology for post treatment surveillance of patients with vulvar intraepithelial neoplasia. *The University of Tennessee health science centre* 2009:1-52.
 14. Vanden Einden L C, Grefte J M, Vander Avoort I A, Vedder J E, Van Kempen L C et al Cytology of the vulva: feasibility and preliminary results of a new brush. *Br. J Cancer* 2012;106(2):269-73.
 15. Coppleson M, Pixley EC. *Gynaecologic Oncology*. Ed 1992, Vol 1, Chapter 16:325-333
 16. IARC Handbooks of Cancer Prevention Volume 10: Cervix Cancer Screening; IARC press, Lyon 2005, p. 85-89
 17. Richart RM. A clinical staining test for the in vivo delineation of dysplasia and carcinoma in situ. *Am J Obstet Gynecol* 1963 Jul;86:703-12.
 18. Collins CG, Hansen LH, Theriot E. A clinical stain for use in selecting biopsy sites in patients with vulvar disease. *Obstet Gynecol* 1966 Aug; 28(2): 158-63.
 19. Friedrich EG Jr. Diagnostic procedures, In Friedrich EG Jr ed. *Vulvar Disease*, 1st ed. Philadelphia, WB Saunders, 1976:27-50

Exercise Training and Weight Gain in Obese Pregnant Women

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The pre-pregnancy obesity and excessive maternal gestational weight gain are increasing in prevalence and is associated with a number of adverse pregnancy outcomes for both mother and child.

Maternal obesity causes a number of adverse outcomes during and after pregnancy, such as gestational diabetes, preeclampsia, caesarean delivery and large for gestational age fetus, as well as increased risk for childhood obesity among the babies.

Besides, over 60% of overweight women gain more weight than recommended during pregnancy. The gestational weight gain is directly associated with maternal weight retained after delivery as well as with childhood obesity and obesity in early adulthood among off-spring. The excess gestational weight gain among mothers may accelerate the obesity epidemic. It has been proposed that pregnancy is a unique period of time with regard to changing women's behaviour.

In general, women are not active enough during pregnancy and women who have a high pre-pregnancy BMI are even less likely to be physically active.

So the prevention of weight gain in overweight and obese pregnant women can be an important public health issue.

Current recommendations say that pregnant women should exercise with moderate intensity for 30 minutes or more on most, if not all, days of the week.

In addition to effects on weight gain, there is a reduction in other pregnancy complications. There is an ability of regular exercise training to prevent gestational diabetes mellitus, as well as the effect on serum biomarkers associated with insulin resistance and inflammation. The exercise training may reduce lumbo-pelvic pain.

Hence, regulated weight gain and careful exercise training can go a long way in providing health benefits to an obese pregnant woman.

Current recommendations say that pregnant women should exercise with moderate intensity for 30 minutes or more on most, if not all, days of the week [6]. Observational studies regarding physical activity in pregnancy have found reduced weight gain in active mothers as well as reduced risk of adverse pregnancy outcomes.

Thyroid Disorders in Pregnancy: 2017 guidelines

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Thyroid disorders are the second most common endocrine disorder in pregnancy after diabetes. Hypo as well as hyperthyroidism affects the pregnancy outcomes adversely. Thyroid disorders are diagnosed on the basis of serum thyroid stimulating hormone (TSH) and thyroid hormones (T4, T3) levels.

	Prevalence in pregnancy	Serum T4, T3	Serum TSH
Overt hypothyroidism	1%	Decreased	Elevated
Subclinical hypothyroidism	3-15%	Normal	Elevated
Isolated hypothyroxemia		Decreased	Normal
Overt hyperthyroidism	0.2%	Elevated	Decreased
Subclinical hyperthyroidism	1.7%	Elevated	Normal

Professional bodies from the fields of Endocrinology and Obstetrics have periodically published guidelines on thyroid disorders in pregnancy. Initially these were based on the western studies but lately data from Asian countries has led to important changes in the recommendations. The latest guidelines are from the American Thyroid Association (ATA). The important recommendations made are discussed below.

Screening strategy:

There is insufficient evidence to recommend for or against universal screening since the most common thyroid dysfunction in pregnancy is subclinical hypothyroidism (SCH) and it is not clear whether treating SCH has any benefits. However pregnant women should be enquired about history of thyroid dysfunction. Screening, when required, is done by checking serum TSH levels at 9-11 weeks gestation.

Diagnosis of hypothyroidism in pregnancy:

TSH: There is a downward shift in the upper and lower limit of the reference range during pregnancy, which varies between different populations. The guidelines recommend use of population-based, trimester-specific reference ranges derived from women with no known thyroid disease, optimal iodine intake, and negative thyroid antibody status. **In the absence of population-based reference ranges, the upper reference limit of 4.0 mU/L may be used instead of the previously recommended limit of 2.5 mU/L.**

FT4: The lab results are affected by the assay technology; therefore, assay method-specific and trimester-specific reference ranges should be used.

Total T4 (TT4) or free thyroxine index can substitute for FT4.

Treatment of hypothyroidism in pregnancy:

Thyroid hormones have a U-shaped effect-both excess and deficiency have adverse effect on fetal development. Therefore it is important to identify the population that will benefit from treatment.

Overt hypothyroidism: Treatment with levothyroxine (LT4) is recommended. Target a TSH in the lower half of the trimester-specific reference range. When this is not available, target TSH concentrations below 2.5 mU/L.

Subclinical hypothyroidism: SCH when associated with positive anti-thyroid peroxidase antibodies (TPOAb) is

more likely to be associated with adverse obstetric outcomes. Anti-TPOAb should be checked if TSH is >2.5mU/L. These two parameters are used to identify women who would benefit from treatment:

TSH	TPOAb	LT4 therapy
Greater than pregnancy-specific reference range	Positive	Recommended
Greater than 10.0 mU/L.	Negative	Recommended
Greater than 2.5mU/L and below the upper limit of pregnancy-specific reference range	Positive	May be considered
Greater than the pregnancy- specific reference range and below 10.0 mU/L	Negative	May be considered
Normal TSH (within the pregnancy-specific reference range or <4.0 mU/L if unavailable)	Negative	Not recommended

TPOAb-positive euthyroid woman: 25-50µg/day of LT4 may be given if she has suffered prior pregnancy losses. The role of treatment in preventing preterm delivery is not clear.

Isolated hypothyroxinemia: should not be routinely treated in pregnancy

Iodine: Pregnant women should take 250 µg iodine daily (not more than 500µg). Iodine supplementation need not be initiated for women taking LT4. 1.5 g (1/4 teaspoon) of iodized salt provides 71µg iodine. Cooking affects the amount of available iodine.

Monitoring during pregnancy:

Thyroid functions are monitored in (a) women with overt and subclinical hypothyroidism (treated or untreated) and (b) women at risk for hypothyroidism (TPOAb positive, post-hemithyroidectomy, treated with radioactive iodine).

Serum TSH is measured every 4 weeks until midgestation and at 30 weeks gestation.

No other testing (e.g., ultrasound) is recommended.

Following delivery:

Women in whom LT4 is initiated during pregnancy and who require low dose (50 µg/day) may not require it post partum. If LT4 is discontinued, serum TSH is evaluated after 6 weeks.

Hypothyroid women planning pregnancy:

Serum TSH is evaluated and LT4 dose is adjusted to achieve a TSH value between the lower reference limit and 2.5 mU/L. The dose is increased by 20-30% after conception. Target a TSH value between the lower reference limit and 2.5 mU/L. Revert to the preconception dose after delivery. Thyroid functions are tested at 6 weeks postpartum.

Hyperthyroidism in pregnancy:

A medical history is taken and physical examination is done. Serum FT4 or TT4 is measured. Thyroid receptor antibodies (TRAb) and TT3 assessment help in clarifying the etiology.

Radionuclide imaging or radioiodine uptake studies are not recommended.

Women receiving methimazole (MMI) are switched to propylthiouracil (PTU) on conceiving. It is not clear whether PTU should be continued or replaced with MMI after 16 weeks of gestation. The lowest effective dose should be used to maintain serum FT4/TT4 at the upper limit or moderately above the reference range. Serum

FT4/TT4 and TSH are monitored every 4 weeks.

Suggested reading

- Alexander EK, Pearce EN, Brent GA, et al. 2017 Guidelines of the American Thyroid Association for the Diagnosis and Management of Thyroid Disease During Pregnancy and the Postpartum. *Thyroid*. 2017; 27(3): 315-389.
- Casey BM, Thom EA, Peaceman AM, et al. Treatment of Subclinical Hypothyroidism or Hypothyroxinemia in Pregnancy. *N Engl J Med*. 2017; 376(9): 815-825.
- Stagnaro-Green A. Second trimester levothyroxine treatment for subclinical hypothyroidism or hypothyroxinaemia of pregnancy does not improve cognitive outcomes of children. *Evid Based Med*. 2017; 22(4): 149.
- Harding KB, Peña-Rosas JP, Webster AC, et al. Iodine supplementation for women during the preconception, pregnancy and postpartum period. *Cochrane Database Syst Rev*. 2017; 3:CD011761.
- Berg V, Nost TH, Skeie G, et al. Thyroid homeostasis in mother-child pairs in relation to maternal iodine status: the MISA study. *Eur J Clin Nutr*. 2017; 71(8): 1002-1007.
- Korevaar TI, Muetzel R, Medici M, et al. Association of maternal thyroid function during early pregnancy with offspring

IQ and brain morphology in childhood: a population-based prospective cohort study. *Lancet Diabetes & Endocrinology*. 2016; 4: 35- 43.

7. Marwaha RK, Chopra S, Gopalakrishnan S, et al. Establishment of reference range for thyroid hormones in normal pregnant Indian women. *BJOG*. 2008; 115(5): 602-6.

Preterm Birth Prevention in Singleton and Twin Pregnancies

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Definition- Preterm labor is defined as regular uterine contractions associated with cervical change >20 -<37 weeks POG.

Classification-

- Extremely pre term- < 28 wks POG
- Very pre term- 28 to 32 wks
- Moderate to late preterm- 32 to <37wks
- Further split: Early preterm- before 33^{6/7}wks
Late preterm – 34 to 36 completed weeks

Risk factors for Pre term birth (PTB)

- Multiple pregnancy
- Uterine malformation
- History of preterm delivery
- Cervical treatment
- At least two previous elective abortions

Strategies for prevention of PTB

Strategies That Have Limited or No Proven Efficacy: include bed rest, avoidance of intercourse, screening and treatment of asymptomatic lower genital tract infection, treatment of gingival disease, Empirical broad-spectrum antibiotic therapy and prophylactic tocolytic therapy.

Strategies That May Have Some Benefit: include Prevention and early diagnosis of sexually transmitted and genitourinary infections, Treatment of symptomatic lower genital tract infection, Cessation of smoking and illicit substance use and Elective (prophylactic) cervical cerclage in indicated cases.

Prediction of PTB in asymptomatic high risk women: Careful history taking pertaining to her previous pregnancies is very important. This risk is correlated with the number of previous preterm deliveries and is highest for the earliest events and those during the most recent pregnancy.

In asymptomatic high-risk population, neither regular recording of uterine activity nor home visits allow the prediction or reduction of the risk of PTB; neither is recommended. But these patients can be monitored with cervical length and fetal fibronectin. The shorter the cervix at an early stage, the greater the risk of preterm delivery

Role of progesterone for prevention of PTB

- 17-hydroxyprogesterone caproate (17OHP) is not recommended for the primary prevention of PTB in women

with singleton pregnancies and no history of preterm delivery.

- Although transvaginal ultrasound screening of women with a shortened cervix is not routinely recommended; the prescription of natural micronized progesterone administered vaginally daily for up to 36 weeks is recommended for asymptomatic women with a singleton pregnancy, no history of preterm delivery, and a cervical length < 20 mm at 16 to 24 weeks.
- Among women with twin pregnancies and a cervix less than 25 mm, the preventive administration of 17OHPC has shown no benefits for prolonging pregnancy or reducing perinatal risk. It is thus not recommended in this context.

Society for Maternal-Fetal Medicine recommendations for use of progestones in prevention of preterm birth¹:

- Singletons without prior preterm birth or unknown or normal cervical length- No evidence of effectiveness
- Singletons with prior spontaneous preterm birth- 17P 250mg i.m weekly 16-20weeks onwards till 36weeks.
- Singletons without prior preterm birth but with cervical length ≤ 20 mm at ≤ 24 weeks-Vaginal progesterone 200mg suppository daily from diagnosis till 36weeks
- Multiple gestations- No evidence of effectiveness

Progesterone v/s cervical cerclage²

Indirect comparison meta-analysis concluded vaginal progesterone and cerclage were equally efficacious in the prevention of PTB.

PTB prevention with cervical cerclage

Diagnosis of cervical insufficiency

Detailed obstetric history, physical examination in current pregnancy and trans vaginal ultrasound cervical length in current pregnancy are essential to diagnose cervical insufficiency.

Patients without a history of spontaneous PTB or second trimester loss, and a cervical length ≤ 25 mm have about a 30–40% risk of preterm delivery (<37 weeks). Patients with a history of a prior spontaneous preterm delivery <34 weeks and a second trimester transvaginal ultrasound cervical length <25 mm have ~60% risk of preterm delivery.

Indications of cervical cerclage

History indicated

- Patients with obstetric history of painless cervical dilation leading to second trimester pregnancy loss.
- Women who previously had an USG indicated cerclage but still delivered before 32 weeks
- If there is history of early PTB before 33 weeks in setting of history indicated cerclage in previous pregnancy then trans abdominal cerclage is indicated.

Timing of cerclage

Transvaginal cerclage is applied between 12-15 weeks POG with an early USG to confirm fetal anatomy before applying cerclage. Trans abdominal cerclage is applied either prior to pregnancy or prior to 12 weeks of pregnancy.

USG indicated cerclage

A patient with a prior spontaneous PTB and current singleton pregnancy with cervical length <25mm between 16 -23^{6/7} weeks.

Physical examination indicated

A patient with cervical dilation at 16–23^{6/7} weeks found on either speculum examination or digital examination in absence of fetal demise, labour, rupture of membranes, chorioamnionitis, abruption or other contraindications to prolongation of pregnancy.

Indications of transabdominal cerclage

- Patient with a prior history-indicated cerclage and subsequent preterm birth <33 weeks.
- Patient who meets criteria for a transvaginal cerclage but due to cervical procedures or Mullerian anomaly has little or no cervix accessible vaginally

Abdominal cerclage can be applied through laparotomy or laparoscopic route.

After displacement of the uterine vessels bilaterally, a 5-mm Mersilene band is guided through the broad ligament at the level of the internal os. The suture is tied anteriorly and left in place till the time of elective cesarean delivery at 38–39 weeks.

Mechanical prevention of PTB in twin pregnancies

Although historically cerclage had been used empirically in twins for PTB prevention, quality to support this benefit is limited. Recent meta-analysis of RCTs has found that an ultrasound indicated cerclage was not associated with the prevention of PTB or early PTB in twin pregnancies, and in fact women randomized to cerclage had slightly increased risk of neonatal morbidities (3). There is an ongoing RCT of cerclage versus expectant management in twin gestations with short cervix (clinicaltrials.gov, NCT02912390) and cerclage versus pessary in twin gestations with short cervix (trialregister.nl, NTR4415). Given the data currently available, a history or ultrasound indicated cerclage cannot be routinely recommended in twin gestations⁴.

Bacterial vaginosis (BV)

The association between BV and spontaneous PTB is low. Studies have found no benefits to screening for and treating BV to prevent the risk of spontaneous PTB in either asymptomatic population at low risk (defined by the absence of a history of preterm delivery) or in the population at high risk (defined by a history of preterm delivery). But patients with previous preterm birth and evidence of infection can be given benefit of early screening and treatment of all lower genital tract infections.

Bibliography

1. Progesterone and preterm birth prevention: translating clinical trials data into clinical practice. SMFM guidelines; AJOG May 2012 .doi: 10.1016/j.ajog.2012.03.010
2. Ehsanipoor R M, Seligman N S, Saccone G, Szymanski LM, Wissinger C, Werner EF, et al. Physical examination–indicated cerclage: a systematic review and meta-analysis. *Obstet Gynecol.* 2015;126:125–135.
3. Saccone G, Rust O, Althuisius S, Roman A, Berghella V. Cerclage for short cervix in twin pregnancies: systematic review and meta-analysis of randomized trials using individual patient-level data. *Acta Obstet Gynecol Scand.* 2015;94(4): 352–358
4. Boelig RC, Berghella V. Current options for mechanical prevention of preterm birth. *Sem Perinatol.* 2017. <http://dx.doi.org/10.1053/j.semperi.2017.08.003>

Elective Delivery Versus Expectant Management for Pre-Eclampsia: Meta-analysis of RCTs

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Pre-eclampsia (PE) occurs in approximately 2–8% of pregnancies, characterized by hypertension in the second or third trimester and consequent damage to other organs (e.g. kidney, liver). Infants born after severe and early onset PE are at an increased risk of significant fetal growth restriction. As delivery is the only curative treatment for PE, therefore, management of PE and timing of delivery is primarily dependent on two important factors: the gestational age and the severity of the disease. The American College of Obstetricians and Gynecologists (ACOG) indicates delivery at 37 weeks of gestation for women with PE (including gestational hypertension).

There is controversy regarding the benefits of elective delivery over expectant management before 34 weeks

of gestation for women with PE. The National Institute for Health and Clinical Excellence (NICE) guidelines recommend expectant management for PE management before 34 weeks of gestation unless severe refractory hypertension or above-threshold (pre-documented in a consultant plan) maternal or fetal indications develop after a course of corticosteroids treatment; while the ACOG taskforce bulletin states that “continued pregnancy should be undertaken only at facilities with adequate maternal and neonatal intensive care resources for women with severe PE at less than 34 weeks of gestation”.

Cochrane review in 2013 included four small trials with a total of 425 patients. This review reported that expectant management for women with early onset severe PE may be associated with decreased infant mortality and neonatal morbidity before 34 weeks of gestation but there was insufficient data to permit reliable conclusions regarding maternal outcomes because of small sample size. Also, women with non-severe PE were not included in the analysis¹. The meta-analysis in 2017 compared (1) the maternal and fetal outcomes of elective delivery versus expectant management; (2) the optimal timing of delivery (before 34 weeks of gestation versus after 34 weeks of gestation) for preventing PE-associated complications. The patient population was classified as having “PE in general” and “severe PE” and separate analyses was performed for each patient group. It included six Randomised Controlled Trials(RCT) with a total of 1239 participants, 483 were diagnosed with severe PE(5 RCT) and 756 with PE and gestational hypertension (1 RCT)²⁻⁷.

Maternal hypertension

Women with PE or gestational hypertension > 34 weeks who underwent elective delivery experienced significantly less increase in both diastolic ($n=756$, 1 RCT; RR, 0.61; 95% CI 0.46–0.80, $p=0.0005$) and systolic blood pressure ($n=756$, 1 RCT; RR, 0.63; 95% CI 0.46–0.85, $p=0.003$). Also, significantly fewer women required either oral or intravenous antihypertensive drug therapy ($p=0.0003$) and ($p=0.0005$), respectively. This was also the case for women less than 34 weeks gestation with severe PE ($n=264$, 1 RCT; RR, 0.01; 95% CI 0.00–0.13, $p=0.0006$).

Maternal death

There were no maternal deaths or strokes in any of the included studies in women with severe PE, PE or gestational hypertension ($n=1020$).

Maternal complications

Three studies reported the incidence of eclampsia; only one study reported one case of eclampsia in each group in women with severe PE <34 weeks gestation², however, the difference was not significant ($n=389$, 3 RCTs, RR 1.02, 95 CI 0.06–16.06, $p=0.99$). High level evidence suggested that in women with severe PE < 34 weeks gestation, elective delivery was associated with a significantly lower incidence of placental abruption ($n=483$, 5 RCTs; RR, 0.43; 95% CI 0.19–0.98, $p=0.04$). But there was no significant difference in the incidence of renal failure ($n=427$, 4 RCTs; RR, 0.33; 95% CI 0.05–2.03, $p=0.23$), pulmonary edema ($n=415$, 3 RCTs; RR, 0.46; 95% CI 0.07–3.05, $p=0.42$) or HELLP syndrome ($n=389$, 3 RCTs; RR, 1.12; 95% CI 0.64–1.97, $p=0.69$). There was no incidence of disseminated coagulopathy in the elective delivery group. Two patients in the expectant management group experienced this complication, however, this difference was not significant ($n=359$, 2 RCTs; RR, 0.20; 95% CI 0.01–4.17, $p=0.30$).

In women with PE >34 weeks gestation, elective delivery significantly lowered the incidence of any maternal complication ($n=756$, 1 RCT; RR, 0.64; 95% CI 0.51–0.80, $p=0.0001$). There were no significant differences in incidence of pulmonary edema ($p=0.30$) or HELLP syndrome ($p=0.08$). Incidence of Postpartum hemorrhage (PPH) was similar in the two groups ($p=0.56$).

Fetal and neonatal mortality

The metaanalysis indicated that there was no difference in the incidence of fetal or neonatal mortality between the management groups in women <34 weeks gestation with severe pre-eclampsia ($n=689$, 5 RCTs; RR, 0.30; 95% CI 0.07–1.22, $p=0.09$) and ($n=485$, 5 RCTs; RR, 1.34; 95% CI 0.82–2.20, $p=0.24$), respectively. There were no neonatal or fetal deaths reported in women >34 weeks’ gestation with PE or gestational hypertension ($n=756$, 1 RCT).

Neonatal complications

Neonates whose mother’s underwent elective delivery for severe PE at <34 weeks gestation required more ventilatory support ($n=300$, 2 RCTs; RR, 1.50; 95% CI 1.11–2.02, $p=0.009$). Also, they had a higher incidence of interventricular hemorrhage or hypoxic ischemic encephalopathy ($n=526$, 2 RCTs; RR, 1.94; 95% CI 1.15–3.28, $p=0.01$). However, significantly more neonates whose mothers were managed expectantly with severe PE

at less than 34 weeks gestation were small-for-gestational age (SGA) ($n=389$, 3 RCTs; RR, 0.37; 95% CI 0.23–0.60, $p < 0.0001$).

In women < 34 weeks gestation with severe PE, there was no significant difference in the incidence of neonatal necrotising enterocolitis ($n=659$, 4 RCTs; RR, 1.78; 95% CI 0.83–3.79, $p=0.14$), bronchopulmonary dysplasia ($n=95$, 1 RCT; RR, 2.13; 95% CI 0.41–11.08, $p=0.37$), pneumothorax ($n=40$, 1 RCT; RR, 3.00; 95% CI 0.34–26.45, $p=0.32$) or cerebral hemorrhage ($n=95$, 1 RCT; RR, 3.20; 95% CI 0.34–29.63, $p=0.31$) between the management groups. The incidence of hyaline membrane disease was similar in both management groups ($n=397$, 3 RCTs, RR 1.66, 95% CI 0.92–2.99, $p=0.09$).

Conclusion

Elective delivery is more beneficial than expectant management for women with PE or gestational hypertension beyond 34 weeks of gestation and women with severe PE to reduce the risk of PE-related complications. However, elective delivery may increase the rate of ventilation use and the risk of interventricular hemorrhage/hypoxic ischemic encephalopathy in neonates.

Therefore, in light of the dilemma in maternal and neonatal outcomes, clinicians should carefully balance the risks versus benefits of elective delivery in women with severe PE before 34-weeks' gestation to achieve optimal outcomes for both the mother and baby.

References

1. Churchill D, Duley L, Thornton JG, Jones L. Interventionist versus expectant care for severe pre-eclampsia between 24 and 34 weeks' gestation. *Cochrane Database Syst Rev.* 2013;7:CD003106.
2. Mesbah EMM. Severe preterm preeclampsia: aggressive or expectant management? *Med J Cairo Univ.* 2003; 71: 175–182.
3. Vigil-De Gracia P, Reyes Tejada O, Calle Miñaca A, Tellez G, Chon VY, Herrarte E, et al. Expectant management of severe preeclampsia remote from term: the MEXPRE Latin Study, a randomized, multicenter clinical trial. *Am J Obstet Gynecol.* 2013; 209:425.e1e8.
4. Odendaal HJ, Pattinson RC, Bam R, Grove D, TJVW Kotze. Aggressive or Expectant Management for Patients With Severe Preeclampsia Between 28–34 Weeks' Gestation: a randomized controlled trial. *Obstet Gynecol.* 1990;76:1070–1075.
5. Sibai BM, Mercer BM, Schiff E, Friedman SA. Aggressive versus expectant management of severe preeclampsia at 28 to 32 weeks' gestation: as randomized controlled trial. *Am J Obstet Gynecol.* 1994;171:818–822.
6. Duvekot J, Bax C, Bloemenkamp K (2015) Temporizing management versus termination of pregnancy in women with severe preeclampsia at 28–34 weeks (TOTEM-Trial). *Am J Obstet Gynecol* 212:S246.
7. GRIT Study Group A randomised trial of timed delivery for the compromised preterm fetus: short term outcomes and bayesian interpretation. *BJOG.* 2003;110:27–32.

Antiretroviral Therapy in Pregnancy: An Update

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In the absence of any intervention, the risk of perinatal transmission of HIV varies from 15 to 45%.¹ The risk factors associated with transmission include maternal plasma and breast milk viral load followed by maternal immunologic status and clinical stage. The perinatal transmission is least (0.09%) with near delivery viral load of < 50 copies/mL compared with 1.0% for viral load 50-399 copies/mL and 2.6% for viral load 400-999 copies/mL.²

As most of new paediatric HIV cases ($> 90\%$) result from perinatal transmission during pregnancy, delivery, or

breast feeding. The use of antiretroviral therapy (ART) in women and their infants is critical for prevention of mother-to-child transmission. Therefore, initiation of lifelong ART is recommended for all HIV-infected pregnant and breastfeeding women regardless of the CD4 cell count and clinical stage of the disease.^{3,4}

The goal of ART is to reduce the viral load to undetectable levels and should be initiated as early as possible in all HIV-infected pregnant women and continued lifelong. In addition, all infants born to HIV-positive women should receive post-exposure antiretroviral prophylaxis. The recommended first-line ART regimen in pregnant and breastfeeding women is the same as recommended in non-pregnant adults. This allows for streamlining ART administration to all adults. ART should be started as once-daily, fixed-dose combination of tenofovir, lamivudine, and efavirenz in all HIV-infected pregnant or breastfeeding women.^{3,4} The advantages of this regimen are high potency, relatively low frequency of severe adverse effects, a greater likelihood of adherence with a once-daily dosing, affordability, and efficacy against hepatitis B virus.

Efavirenz-containing ART regimen at 12 to 28 weeks gestation results in viral load suppression in 98 percent by delivery and 91 percent at 48 weeks postpartum.⁵ Tenofovir and Efavirenz have been extensively studied during pregnancy and found to be safe for both pregnant women and their infants. Recently concerns have been raised regarding the increased risk of very preterm birth and neonatal death with tenofovir exposure during pregnancy. However, the evidence is not strong enough to stop using tenofovir as first line drug.⁶

For women who cannot tolerate or receive components of the preferred first line regimen, recommended alternative agents are zidovudine to replace tenofovir and nevirapine to replace efavirenz in the three-drug regimen. Zidovudine and Nevirapine have also been found to be effective and safe in pregnant and breastfeeding women.

The rationale for the recommending lifelong ART is- extended protection against mother-to-child transmission during future pregnancies without frequent treatment interruptions, prevention of HIV transmission to uninfected sexual partners, overall decreasing costs of ART regimens and increased operational feasibility in many countries.

In addition to maternal ART, all infants should receive postexposure prophylaxis to prevent transmission from exposure to HIV during delivery and breastfeeding period. The recommended regimen depends on the infant's risk of infection, as determined by the timing of maternal infection, maternal ART use, and the type of infant feeding. Prophylaxis should start as soon as possible after birth, preferably within 6 to 12 hours.

In infants born to HIV-infected mothers who have a viral load >1000 copies/mL within four weeks prior to delivery, or did not receive ART or received ART for less than four weeks prior to delivery, or who acquired HIV infection during pregnancy or breastfeeding- recommended prophylaxis regimen is daily nevirapine plus twice-daily zidovudine for the first six weeks of life. Breastfeeding infants should continue an additional six weeks of prophylaxis with the same combination or with nevirapine alone; if the mother cannot tolerate or declines ART, then the infant should continue nevirapine prophylaxis throughout the duration of breastfeeding, until one week following breastfeeding cessation (if nevirapine is not tolerated, daily lamivudine can be used). The recommendation for a combination regimen for prophylaxis of high-risk infants is based on evidence demonstrating greater efficacy of two-drug compared with single-drug regimens in preventing perinatal HIV transmission in cases when the mother is not on suppressive ART.³

For infants born to women who had achieved viral suppression on ART or who had been regularly taking ART for more than four weeks by the time of delivery, recommended prophylaxis regimen includes six weeks of daily nevirapine for those who are breastfeeding and four to six weeks of daily nevirapine or twice-daily zidovudine for those who are receiving replacement feeding.³

The duration of infant antiretroviral use in situations where the mother is receiving ART is an empiric recommendation based on the estimated time necessary to reduce viral load.

HIV-TB coinfection: The tuberculosis treatment should be started first, and followed by ART as soon as feasible (usually after 2 weeks)

HIV- HBsAg coinfection: No change in ART

Infection with HIV 2: mother-to-child transmission risk is 0-4%. NNRTI drugs, such as NVP and EFV, are not effective against HIV-2 infection. Therefore, women who are infected with HIV-2 alone should receive 2 NRTIs plus LPV/r and for infants prophylaxis NVP with AZT (instead of Syrup NVP alone).

If a pregnant woman is detected to have both HIV-1 and HIV-2 infections, she should receive standard first ART Regimen (TDF+3TC+EFV) recommended for women with HIV-1 infection.⁴

References

1. John GC, Kreiss J. Mother-to-child transmission of human immunodeficiency virus type 1. *Epidemiol Rev* 1996; 18:149.
2. Townsend CL, Byrne L, Cortina-Borja M, et al. Earlier initiation of ART and further decline in mother-to-child HIV transmission rates, 2000-2011. *AIDS* 2014; 28:1049.
3. World Health Organization. Guideline on when to start antiretroviral therapy and on pre-exposure prophylaxis for HIV. September 2015. http://apps.who.int/iris/bitstream/10665/186275/1/9789241509565_eng.pdf?ua=1 (Accessed on October 30, 2017). 26
4. Updated Guidelines for Prevention of Parent to Child Transmission (PPTCT) of HIV using Multi Drug Anti-retroviral Regimen in India. December, 2013. http://naco.gov.in/sites/default/files/National_Guidelines_for_PPTCT.pdf (Accessed on October 30, 2017).
5. Cohan D, Natureeba P, Koss CA, et al. Efficacy and safety of lopinavir/ritonavir versus efavirenz-based antiretroviral therapy in HIV-infected pregnant Ugandan women. *AIDS* 2015; 29:183. 31
6. British HIV Association (BHIVA). Response to BMJ article published 11 September 2017. <http://www.bhiva.org/BHIVA-response-to-BMJ-article.aspx> (Accessed on October 30, 2017).

Uterine Artery Embolization Vs Hysterectomy in the Treatment of Symptomatic Uterine fibroids

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Uterine Artery embolization (UAE) is a minimally invasive pelvic angiographic procedure, using hemostatic particles that occludes the blood supply to the fibroids and cause them to shrink. The main indication for UAE is symptomatic fibroids (causing heavy menstrual bleeding, dysmenorrhoea, pain, dyspareunia, pressure effects on urinary or gastrointestinal tract), medical condition contraindicating surgery or previous unsuccessful surgery for fibroids. UAE can also be offered to women with recurrent abortions or infertility due to otherwise asymptomatic fibroids after careful counselling.

Evidence has demonstrated that UAE has good short- and medium-term success rates with acceptable morbidity and very low mortality.

National Institute for Health and Care Excellence (NICE 2010) guidance document states that the procedure is efficacious for symptom relief in the short and medium term for a substantial proportion of patients. There are no major safety concerns. Therefore, this procedure may be used provided provided that normal arrangements are in place for clinical governance and audit.

A systematic review and meta-analysis performed by Toor et al. (2012) to determine complication rates and effectiveness of uterine artery embolization (UAE) in the treatment of symptomatic uterine fibroids. Fifty-four studies met the inclusion criteria (n=8159). There were no reported deaths. Major complications occurred at a rate of 2.9%. The rate of hysterectomy for resolution of a complication from UAE was 0.7% (0.5-0.9%) and the rate of readmission was 2.7% (1.9-3.7%). Other complications recorded were leiomyoma tissue passage [4.7% (3.9-5.7%)], deep venous thrombosis or pulmonary embolism [0.2% (0.2-0.4%)] and permanent amenorrhoea [3.9% (2.7-5.3%)]. Reintervention rates including repeat UAE, myomectomy, or hysterectomy calculated per patient-year occurred at 5.3% (4.2-6.4%) with follow-up ranging from 0.25 to 5 years. Clinical symptomatic improvement ranged from

78% to 90%, with follow-up ranging from 0.25 to 2 years. They concluded that UAE is an effective procedure for symptomatic fibroids with a low rate of major complications supporting its use as an alternative to hysterectomy.

Another meta-analysis conducted by Martin et al. (2013) to review the complications and reinterventions in uterine artery embolization (UAE) for symptomatic uterine fibroids. In randomized clinical trials, common complications were discharge and fever (4%), bilateral uterine artery embolization (UAE) failure (4%) and postembolization syndrome (2.86%). In 76 nonrandomized studies, common complications were amenorrhea (4.26%), pain (3.59%) and discharge and fever (3.37%). Two trials showed a significantly decreased risk in major complications and none of the trials showed a significant difference in minor complications of UAE. Three trials showed a significantly increased risk for reintervention with UAE. They concluded that, overall, UAE has a significantly lower rate of major complications relative to surgery, but it comes at the cost of increased risk of reintervention.

Cochrane Database of Systematic Reviews (2015) assessed the benefits and risks of UAE versus other medical or surgical interventions for symptomatic uterine fibroids. Seven randomized controlled trials (n=793) were included in this review. Three trials compared UAE with abdominal hysterectomy, two trials compared UAE with myomectomy and two trials compared UAE with either type of surgery (53 hysterectomies and 62 myomectomies). The authors reported no difference in patient satisfaction rates at up to two years following UAE versus surgery and at five year follow-up, it was inconclusive. There was no difference in the risk of major complications, but UAE was associated with a higher rate of minor complications and an increased likelihood of requiring surgical intervention within two to five years of the initial procedure.

Thus UAE is an effective procedure for the treatment of fibroids, as an alternative to hysterectomy but with careful patient selection and counselling due to higher risk of requiring further surgical intervention.

References:

1. Gupta JK, Sinha A, Lumsden MA, Hickey M. Uterine artery embolization for symptomatic uterine fibroids. Cochrane Database Syst Rev. 2014 Dec 26; 12:CD005073.
2. Martin J, Bhanot K, Athreya S. Complications and reinterventions in uterine artery embolization for symptomatic uterine fibroids: a literature review and meta-analysis. Cardiovasc Intervent Radiol. 2013 Apr; 36(2):395-402.
3. National Institute for Health and Care Excellence (NICE). IPG 367. Uterine artery embolisation for fibroids. November 2010.
4. Toor SS, Jaber A, Macdonald DB, et al. Complication rates and effectiveness of uterine artery embolization in the treatment of symptomatic leiomyomas: a systematic review and meta-analysis. AJR Am J Roentgenol. 2012 Nov; 199(5):1153-63.

Treatment Strategies for WHO Type II Anovulation: Systematic Review and Metaanalysis

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Treatment Strategies for WHO Type II Anovulation: Systematic review and meta-analysis

Infertility affects one in seven couples, and ovulation disorders account for a quarter of all cases. Normogonadotrophic anovulation, also classified as **WHO type II anovulation**, is the **most common** category of anovulatory infertility. Within this group, polycystic ovary syndrome (**PCOS**) is by far the most prevalent cause.

Safe and effective ovulation induction is important for women with WHO group II anovulation who wish to conceive, to avoid premature resort to IVF.

Several medical options are available to treat ovulation disorders and infertility, including oestrogen receptor modulators (such as clomiphene and tamoxifen), aromatase inhibitors (such as letrozole), insulin sensitising

drugs (such as metformin), and direct gonadotropin stimulation with laparoscopic ovarian drilling being a surgical alternative. In this review I will discuss few recent meta-analyses addressing this topic.

Lifestyle intervention

It is a recommended first line treatment especially for the obese women as it leads to higher spontaneous ovulation and natural conceptions rates and should be in conjunction to drug treatment.

*Legro et al*¹ in their recent study demonstrated that lifestyle modification with weight loss before ovulation induction improved ovulation and live birth in obese PCOS women.

Medical treatments

Clomiphene has been the longstanding first line medical treatment for WHO group II anovulation. Previously traditional pairwise meta-analysis were done allowing comparison of two interventions for ovulation induction and many of these treatment strategies were not compared directly in randomised controlled trials. Therefore, making it difficult to identify the most effective treatment for PCOS patients.

Network meta-analysis, also known as multiple treatment comparison meta-analysis, compares multiple treatments in one statistical model and provides a hierarchy of effectiveness of these treatments that can thus guide clinical decision making. This application is crucial in areas where multiple interventions are available, such as in WHO group II anovulation.

*RWang et al*² in early 2017 performed a systematic review and network meta-analysis to compare the effectiveness of different treatment options in women with WHO group II anovulation, and to identify the best strategy for first line treatment.

Methodology

Fifty seven randomised controlled trials (RCTs) reporting on 8082 women were included comparing eight ovulation induction treatments in women with WHO group II anovulation: clomiphene, letrozole, metformin, clomiphene and metformin combined, tamoxifen, gonadotropins, laparoscopic ovarian drilling, and placebo or no treatment. This study compared all of the most common regimens of ovulation induction with each other, using direct and indirect means.

Conclusions and Clinical Implications

- In women with WHO group II anovulation including anovulatory PCOS, **expectant management is not recommended**, because pharmacological ovulation induction significantly improves pregnancy rate compared with placebo or no treatment.
- **Letrozole can be recommended as first line treatment** due to its **higher ovulation, pregnancy, and live birth rate as well as lower multiple pregnancy rate**. The superiority of letrozole **over clomiphene** was stable in all sensitivity analyses including modifying the criteria of population (treatment naive), reporting strategies (reporting clinical pregnancy) and quality of included studies (low risk of randomisation and allocation bias).
- **Clomiphene and metformin** combined was the **most effective treatment in terms of pregnancy but not live birth**; the potential higher chances of side effects should also be taken into account in decision making.
- **Gonadotropins**, though an effective treatment option, had the **greatest probability of leading to multiple pregnancy**. It is therefore **not recommended** to use gonadotropins as the **first line treatment in treatment naive women with WHO group II anovulation**.
- Laparoscopic ovarian drilling (**LOD**) was usually undertaken in clomiphene resistant women. According to current evidence, including data on long term follow-up, laparoscopic ovarian drilling is recommended as an **effective and economic second line treatment for ovulation induction in women with clomiphene resistant PCOS**.

CC Resistance

*Yu et al*³ performed a thought-provoking network meta-analysis in patients with **clomiphene citrate resistant (CCR) PCOS** to **rank the reproductive efficacies** of various types of ovulation induction therapies.

Methodology

They included 26 randomized clinical trials to rank the reproductive efficacies of 9 types of ovulation induction

therapies: clomiphene citrate (CC), metformin, letrozole, follicle stimulating hormone (FSH), human menopausal gonadotropin (hMG), unilateral laparoscopic ovarian drilling (ULOD), bilateral laparoscopic ovarian drilling (BLOD), the combination of metformin with letrozole (metformin+letrozole), and the combination of metformin with CC (metformin+CC).

Conclusions and Clinical Implications

- Based on the ranking probabilities, **hMG and metformin+letrozole** therapies had the **highest** probabilities of **ranking first** in the comparisons of **pregnancy rates** and **live birth rates** and the highest probabilities of **ranking last in comparisons of abortion rates**.
- **Metformin+letrozole** and **FSH** therapies had the **highest** probabilities of **ranking first in comparisons of ovulation rates per cycle**, however hMG therapy was excluded from this analysis because relevant data could not be obtained
- In general, the **three most efficacious therapies** were **hMG, FSH and metformin+letrozole** with regard to reproductive outcomes.
- The **three least efficacious** therapies were **CC, ULOD and BLOD**.
Interestingly, they **concluded** that there was **still insufficient high-quality evidence to detect the most effective therapy for ovulation-induction in CCR-PCOS patients**

Inositols for ovulation induction

In women with PCOS, a defect in tissue availability or altered metabolism of inositol and/or inositolphosphoglycan mediators (a second messenger pathway in insulin signalling) has been suggested to contribute to insulin resistance⁴.

Pundir et al⁴ recently conducted a systematic review and meta-analysis of ten RCTs that evaluated the effects of **inositol** as an **ovulation induction agent**.

Methodology

Inositol (myo-inositol or di-chiro-inositol) was compared with placebo in seven trials, myo-inositol was compared with di-chiro-inositol and with placebo in a three-arm trial, myo-inositol was compared with di-chiro-inositol in one trial, and one trial compared myo-inositol with metformin. They found **no RCTs that compared myo-inositol with clomiphene**.

Conclusions and Clinical Implications

- In anovulatory women with PCOS, treatment with **inositol significantly increased the ovulation rate compared with placebo**, however there was **no difference** when compared with **metformin**.
- In women diagnosed with PCOS and known to have oligomenorrhoea or amenorrhoea, **inositol increases the frequency of menstrual cycles six-fold compared with placebo**.
- There was **no difference in cycle regularisation between myo-inositol and di-chiro-inositol**.
- There was **no difference in clinical pregnancy rate between myo-inositol and metformin**
- **No studies evaluated live birth and miscarriage** rates as an outcome.

They **concluded** that it was to be seen if **this improvement translates into clinical benefit** with improved pregnancy and increased live birth rate and into reduced development of metabolic complications including gestational diabetes, type II diabetes or metabolic disease.

References

1. Legro RS, Dodson WC, Kunselman AR, et al. Benefit of delayed fertility therapy with preconception weight loss over immediate therapy in obese women with PCOS. *J Clin Endocrinol Metab* 2016;101:2658-66.
2. Wang Rui, Kim Bobae V, van Wely Madelon, Johnson Neil P, Costello Michael F, Zhang Hanwang et al. Treatment strategies for women with WHO group II anovulation: systematic review and network meta-analysis *BMJ* 2017; 356 .
3. Yu Y, Fang L, Zhang R, et al. Comparative effectiveness of 9 ovulation-induction therapies in patients with clomiphene citrate-resistant polycystic ovary syndrome: a network meta-analysis. *Scientific Reports*. 2017;7:3812.
4. Pundir J, Psaroudakis D, Savnur P, Bhide P, Sabatini L, Teede H, Coomarasamy A, Thangaratinam S. Inositol treatment of anovulation in women with polycystic ovary syndrome: a meta-analysis of randomised trials. *BJOG*. 2017

Morcellation in Fibroids: Risks and Current Practice

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Fibroids and Abnormal uterine bleeding are the two commonest indication for hysterectomy and/or myomectomy. With the advancement of laparoscopic instruments and technique big uteri and fibroids can be dealt by minimal invasive technique. The benefits of minimally invasive surgery (MIS) for treating a variety of gynecologic conditions are well documented. The ability to offer less invasive surgery to women often requires the removal of large tissue specimens through small incisions, which may be facilitated by morcellation. The term morcellation encompasses a variety of surgical techniques, some used in concert with specific devices, used to enable removal of large specimens from the peritoneal cavity, avoiding the need for laparotomy.

There are three general categories of uterine morcellation: (1) vaginal morcellation with a scalpel through a culdotomy or colpotomy, (2) minilaparotomy/ laparoendoscopic single site (LESS) morcellation with a scalpel, and (3) electromechanical morcellation. The former two approaches have been used for decade.

While the U.S. Food and Drug Administration (FDA) approved the first electromechanical morcellation device in 1995, it recently issued a statement discouraging the use of “power” or electromechanical morcellation for hysterectomy and myomectomy in most women with uterine myoma.

The FDA’s recommendations must be taken very seriously, as patient safety and avoiding preventable harm are of paramount importance. However, the studies analyzed by the FDA in formulating this recommendation were not stratified by risk factors for sarcoma and were not necessarily performed in the setting of reproductive-age women with presumed benign leiomyomata. Further, in addition to the risk-benefit ratio of morcellator technology per se, one must also consider the implications of alternative surgical options for women if morcellator use is suspended nationwide.

The AAGL has maintained for several years (and reiterated in the 2011 position statement on route of hysterectomy) that morcellation is contraindicated in settings “where uterine malignancy is either known or suspected”. However, the dilemma with morcellation is that even with our diagnostic acumen and tools, uterine malignancy may not always be identifiable during preoperative evaluation.

The risk of endometrial cancer increases significantly with age, obesity and unopposed estrogen exposure (Level II-2). It is an uncommon diagnosis in women before the age of 40, with a peak between ages 75 and 90 and a median age of diagnosis of 66 (Level II-2). Even less common in reproductive-aged women and the general population is uterine LMS, an aggressive and rare subtype of uterine cancer. LMS represents a particular challenge in gynecology, as it behaves aggressively and can be difficult to distinguish from benign myomatous disease. The FDA estimated 1 in 350 women undergoing hysterectomy or myomectomy for the treatment of fibroids is found to have an unsuspected uterine sarcoma and has 30% of mortality

Why are we so worried about LMS and morcellation since Overall survival for women diagnosed with LMS is universally poor, with only 40% alive at 5 years. Upstaging of disease, Recurrence rates and survival outcomes are poor even in the setting of early stage disease and the preoperative diagnose both clinically and imaging is not very confirmatory.

Factors reported to assist preoperatively.

- Rapidly enlarging uterus - Not reliable A common consideration regarding sarcoma includes a history of rapid uterine growth, but evidence suggests this is not a reliable predictor. One single-institution series of 1332 women undergoing surgery for presumed uterine myoma found a 0.23% risk of sarcoma overall, as compared

to 0.27% in those reporting rapid growth (Level III). Also another Retrospective review of 580 leiomyosarcomas found only <3% had a rapidly enlarging uterus Same review: 1 LMS found in 371 women with operation for rapidly growing fibroids (Parker et al., ObstetGynecol1994)

- Menopausal bleeding
- Tamoxifen (carcinosarcoma)
- Pelvic radiation
- Increasing Age • Mean age = 60, Highest incidence age > 65
- Black race (X2)
- Hereditary leiomyomatosis and renal cell cancer (HLRCC)
- Survivors of childhood retinoblastoma

Appropriate Screening methods should be included in all women undergoing the surgery- Cervical Cancer Screening, Endometrial sampling and imaging. They can be useful in the preoperative setting in diagnosing unrecognized uterine pathology and ascertaining a woman's candidacy for morcellation (Level C). Endometrial sampling has a 30-84% detection rate. IMAGING- Features that suggest leiomyosarcoma are also features consistent with benign degenerating fibroids which are Echogenic areas: with central necrosis , Irregular vessels, Low impedance with high PSV. MRI should be advised in doubtful cases to differentiate between adenomyosis but also much serious LMS. It shows Central necrosis with ill-defined margins. Prospective study done by *Gotoet al, in 2002* on 130 women with – Dynamic gadopentetate dimeglumine-enhanced MRI with degenerating uterine myoma, 10 with LMS and combined with serum analysis of LDH – Differentiated LMS vs fibroids with 100% PPV & NPV. Though this has not been replicated nor do they address non-degenerating uterine myomas.. Another Retrospective study by *Sato et al, 2014* did MRI Diffusion weighted imaging in 81 specimens, including 5 LMS. Comparison to post op pathology: PPV 66.7%, NPV 100% . this Need confirmation of data and a larger study.

So it can be easily said to date, there is no effective way to screen for uterine leiomyosarcoma but can be suspected and morcellation should be definately avoided inview of upstaging of disease.

Park et al studied the Impact of morcellation on prognosis for early stage uterine leiomyoma and published in gyneac oncology journal in 2011.

George et al in 2014 did retrospective study, n=58 (39 with hystrectomy and 19 with intra peritoneal morcellation) –Morcellation group was associated with increased risk of abdominal/pelvic recurrence (p=0.001). Shorter median recurrence-free survival (10.8 months vs39.6 months, p=0.002)

What options do we have now after FDA discouraged the use of morcellation?

Laprotomy, Vaginal Morcellation or in bag morcellation Investigators are examining the safety and feasibility of using EMM within a specimen containment system, but current data are limited. In theory, this approach may help with the problem of tissue dissemination, Decrease risk of De novo Endometriosis and Adenomyosis. Additionally, there are technical challenges associated with the approach:

- Variability in size, shape, and weight of uterine tissue makes placing the specimen into the bag challenging.
- Puncturing the bag in some cases of multiport laparoscopy can be a risk.
- Visualization of the mass within the bag may be suboptimal.
- Visualization of vital structures external to the bag may be obscured.
- Advanced laparoscopic skills are required to avoid complications performing EMM inside a bag.

A variety of specimen retrieval pouches are available on the market. Although this approach makes intuitive sense from a patient safety perspective, there is no evidence to date that EMM within a bag improves prognosis in the setting of unsuspected malignancy. Use of a containment system in vaginal and abdominal cases is being entertained as well. A recent study of 12 endometrial cancer patients whose uteri (mean weight 291±80 grams) were morcellated vaginally in a bag after laparoscopic hysterectomy demonstrated no evidence of local or distant recurrence at a median follow-up of 18 months; these cases were not stratified by grade (Level III).

However, it remains uncertain whether this technique maintains the architectural integrity to facilitate adequate pathologic analysis or preserves oncologic outcomes, both of which must be confirmed in larger studies. Also the question is in myomectomy in unsuspected LMS where the spillage of cells occur as soon the insicion is made.

So what can we do is informed consent in all cases since the unsuspected ones are big challenge. With regard to all forms of tissue morcellation, the following risks should be included in the discussion:

Dissemination of malignant tissue in the peritoneal cavity, which may worsen prognosis. Dissemination of benign tissue, which may result in untoward health consequences, including the need for re-operation or additional treatments. Rendering complete pathologic evaluation of a tissue specimen more difficult. Injury to adjacent organs unique to the technique of morcellation.

These risks should be weighed in the context of the benefits of a minimally invasive approach as well as the risks and benefits of expectant management or laparotomy as alternatives. The risks of laparotomy should be noted, including wound infection, blood transfusion, longer recovery periods and the potential for life threatening complications such as venous thromboembolic disease (Level A).

It is premature to conclude definitely the actual risk of encountering an occult sarcoma during MIS for presumed fibroids, and newer, more comprehensive studies are needed to better inform this risk. Elimination of morcellation as a tool could deprive a significant number of women the option of minimally invasive surgery.

Selective Progesterone Receptor Modulators

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Selective progesterone receptor modulators (SPRMs) are synthetic steroids, which exert agonist, antagonist, or mixed effects through progesterone nuclear receptors and its isoforms A and B. Their action as an agonist or antagonist depends on interaction with coactivators and co-receptors in specific tissues. SPRMs include mifepristone, asoprisnil, ulipristal acetate, and telapristone acetate. Some PRMs may have intrinsic progestin activity while others behave as pure antagonists such as mifepristone. Because of antiproliferative endometrial effect, amenorrhea and anovulation caused by SPRMs, potential clinical applications include medical management of leiomyoma, endometriosis, abnormal uterine bleeding and in contraception.

All SPRMs have been shown to decrease uterine leiomyoma size and reduce uterine bleeding. Reported reduction in leiomyoma volume is up to 41% with ulipristal acetate and 22-57% with mifepristone with varied doses. Also, they induce amenorrhea in upto 95% users. After stopping treatment, menstruation usually returns within 4-5 weeks. SPRMs reduces leiomyoma volume acts by their proapoptotic and antiproliferative on leiomyoma cells; besides they suppress extracellular matrix synthesis. However, the cellular mechanisms by which SPRMs control endometrial bleeding are still poorly understood. Reduction in numbers of uterine NK cells and their complex interaction with the spiral arteries and endometrial stroma cells may explain SPRMs' effect on reduction in bleeding. Medical treatment with SPRMs is an option for large unresectable fibroids, large asymptomatic fibroids, patients with severe anaemia, adolescents and perimenopausal females.

In endometriosis, upto 50% reduction in lesion size has been reported with mifepristone, onapristone and ulipristal. Both mifepristone and asoprisnil can reduce dysmenorrhoea associated with endometriosis, hence potentially they may offer a fertility sparing acceptable medical treatment.

Progesterone is vital for sustaining pregnancy, hence antagonistic action of SPRMs make them suitable for their use for contraception. Mifepristone, with its potent antagonistic effect, was first licensed for use in medical termination of pregnancy in 1984. Ulipristal is licensed for emergency contraception due to inhibition of ovulation, and also due to the endometrial effects which may prevent implantation.

In initial studies with SPRMs, there was a concern of endometrial hyperplasia. However, progesterone receptor modulator-associated endometrial changes (PAEC) was not a known entity then. Now, endometrial changes specific to SPRMs have been designated PAEC which includes cystic dilatation of glands with mixed estrogenic (mitotic) and progestogenic (secretory) features, non-synchronous endometrium, pseudo-stratification of epithelium, pseudo-decidualized stroma, abnormal, dilated thin blood vessels with no evidence of atypical hyperplasia. Despite paucity of mitoses, PAEC may be mistaken for endometrial hyperplasia.

Although PAEC is described as benign and reversible, the treatment with SPRMs is best administered in an intermittent manner where the PAECs rapidly disappear, while the beneficial effects on fibroid size and uterine bleeding are maintained.

References:

1. Andrea Wagenfeld, Philippa T.K. Saunders, Lucy Whitaker & Hilary O.D. Critchley. Selective progesterone receptor modulators (SPRMs): progesterone receptor action, mode of action on the endometrium and treatment options in gynecological therapies, *Expert Opinion on Therapeutic Targets*, 2016;20(9):1045-54.
2. Bouchard P, Chabbert Buffet N. The history and use of the progesterone receptor modulator, ulipristal acetate, for heavy menstrual bleeding with uterine fibroids, *Best Pract Res Clin Obstet Gynaecol*. 2017, doi: 10.1016/j.bpobgyn.2016.12.002.
3. Safrai M1, Chill HH, Reuveni Salzman A, Shushan A. Selective Progesterone Receptor Modulators for the Treatment of Uterine Leiomyomas. *Obstet Gynecol*. 2017;130(2):315-8.
4. Kulshrestha V, Kriplani A, Agarwal N, Sareen N, Garg P, Hari S, Thulkar J. Low dose mifepristone in medical management of uterine leiomyoma - an experience from a tertiary care hospital from north India. *Indian J Med Res*. 2013;137(6):1154-62.
5. Donnez J, Arriagada P, Donnez O, Dolmans MM. Current management of myomas: the place of medical therapy with the advent of selective progesterone receptor modulators. *Curr Opin Obstet Gynecol*. 2015;27(6):422-31.

Risk Reducing Salpingectomy/ Salpingo-oophorectomy: Current Guidelines

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Ovarian cancer is the fifth leading cause of cancer-related death among women in the United States (US). Epithelial ovarian cancer (EOC) represents 95% of all malignant ovarian neoplasms. The most lethal subtype is high grade serous EOC, representing 70-75% of all cases of ovarian carcinoma.

Regarding pathogenesis, there is a shift in the "ovarian" cancer paradigm to one that groups cancer of the fallopian tube, peritoneum, and ovary by etiology, molecular and immunohistochemical characteristics, grade, and clinical behavior rather than location. In this paradigm, the fallopian tube is central in the carcinogenesis of serous, endometrioid, clear cell, and undifferentiated epithelial carcinomas. Extirpative and occlusive tubal surgeries are gaining momentum as methods of ovarian cancer prevention.

Risk-reducing salpingo-oophorectomy

Premenopausal RRSO improves overall survival in women with BRCA mutations by decreasing ovarian and, most likely, breast cancer. The age at which RRSO is performed determines the degree of protection. When performed prior to age 45 years, occult cancer is noted in 4-8% of specimens. When surgery is delayed until age 45 or older, the incidence increases to as much as 20%. Surgery before age 50 years reduces mortality by 53-79%.

Risk-reducing surgery decreases the risk of ovarian cancer by 72-96% and the risk of breast cancer by up to 64%, though some studies and biostatisticians bring the breast cancer protective association into question. **NCCN recommends** that women with BRCA1/2 mutations should have their ovaries and fallopian tubes removed once childbearing is complete and by 35-40 years of age. Given the later age of onset of ovarian cancer in BRCA2 mutation carriers, the NCCN contends that it is reasonable for BRCA2 mutation carriers to wait until 40-45 years of age if the woman has undergone bilateral mastectomy.

Prophylactic salpingectomy with delayed oophorectomy

Many BRCA mutation carriers decline the recommendation of premenopausal RRSO. For women who decline, prophylactic salpingectomy with delayed oophorectomy [PSDO] is an option. In a practice statement on Salpingectomy for Ovarian Cancer Prevention, the SGO recommended that physicians of such patients discuss the option of salpingectomy while awaiting oophorectomy. In contrast, the NCCN discourages PSDO outside of a clinical trial.

Opportunistic bilateral salpingectomy/ Risk Reducing Salpingectomy

Opportunistic bilateral salpingectomy (OBS) at the time of gynecologic surgery for benign disease and sterilization is an attractive option in women at average-risk for ovarian cancer. Histopathologic research has demonstrated biologic plausibility, and clinical data, though limited, consistently suggests a protective effect.

In a recent meta-analysis by Yoon SH et al, out of 77 studies 3 were included in the meta-analysis. 29 of the 3509 BS patients developed OC compared with 44,006 of the 5,655,702 without salpingectomy. The meta-analysis results based on the fixed effects model revealed a significant decrease in the risk of OC occurrence in the patients who underwent BS relative to the controls (OR 0.51, 95% CI 0.35-0.75, I^2 0%).

Falconer and colleagues, performed a large population-based cohort study using Swedish registries to evaluate the effect of benign gynecologic surgery on the development of ovarian cancer. In decreasing order of effect size, hysterectomy with BSO (HR 0.06; 95% CI, 0.03-0.12), bilateral salpingectomy (HR 0.35, 95% CI, 0.17-0.73), unilateral salpingectomy (HR 0.71; 95% CI, 0.56-0.91), sterilization procedures (HR 0.72; 95% CI, 0.64-0.81), and hysterectomy alone (HR 0.79; 95% CI, 0.70-0.88) were associated with a decreased risk of ovarian cancer. Studies suggest that OBS at the time of hysterectomy or sterilization is safe and feasible with no increase in complications and readmission rates while surgical time is slightly increased. OBS does not appear to significantly impact ovarian reserve or perfusion.

Suggested reading

1. Yoon SH, Kim SN, Shim SH, Kang SB, Lee SJ. Bilateral salpingectomy can reduce the risk of ovarian cancer in the general population: A meta-analysis. *Eur J Cancer*. 2016; 55:38-46.
2. National Comprehensive cancer network, NCCN Clinical Practice Guidelines in Oncology (NCCN guidelines –Version 2.2017)- Genetic/ Familial High Risk Assessment- Breast and Ovarian. Published December 7, 2016. Accessed 10th November 2017
3. Falconer H, Yin L, Grönberg H, Altman D. Ovarian cancer risk after salpingectomy: a nationwide population-based study. *J Natl Cancer Inst*. 2015;107(2) pii: dju410.
4. Salvador S, Scott S, Francis JA, Agrawal A, Giede C. No. 344-Opportunistic Salpingectomy and Other Methods of Risk Reduction for Ovarian/ FallopianTube/ Peritoneal Cancer in the General Population. *J Obstet Gynaecol Can*. 2017; 9(6):480-493.

Cesarean on Demand is the Right of Every Pregnant Woman (Debate- For the Motion)

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Cesarean delivery on maternal request (CDMR) is defined as a primary pre-labor cesarean delivery on maternal demand in the absence of any maternal or fetal indications. There is great controversy and inadequate data which show the benefit of a planned caesarean without any indication vis a vis a normal vaginal delivery.

Factors affecting the decision

The risks and benefits of cesarean delivery on maternal request need to be carefully balanced with the risks and benefits of a planned vaginal delivery. Patient-specific issues that can affect the choice of delivery route include existing medical problems, patient's Body Mass Index, further pregnancy plans, prior childbirth experiences, previous surgeries, and the woman's self philosophy about childbirth.

Reasons for cesarean delivery on maternal request:

Tocophobia, which means an intense fear of having childbirth, is a main reason for maternal request for LSCS. Between 6–10% of women suffer from tocophobia. Critical life experiences (e.g., trauma, violence, or poor obstetric outcomes) and anxiety about the birth process may prompt her request. Other factors which make women request for a cesarean delivery are social factors, high levels of anxiety due to natural labor, pain in the natural labor, the fear of pelvic floor injuries and the possibility of being left alone during labor. In a study done in south India the reasons for CDMR in the primigravida were choice for a painless delivery, previous history of infertility and the refusal to go for induction of labor in view of post-datism. The reasons for the same in a multiparous woman were refusal for VBAC, need for simultaneous tubectomy, fear of neonatal outcome, elderly gravidas and baby extraction at a particular time.

Maternal Benefits of CDMR:

Short-term benefits

Potential short-term benefits of planned cesarean delivery compared with a planned vaginal delivery include a decreased risk of hemorrhage and transfusion, fewer surgical complications, and a decrease in urinary incontinence during the first year after delivery. Liu X. et al. reported a retrospective cohort study of 66,226 women, including 16,333 women (24.7%) who underwent CDMR. Compared with nulliparous women who tried vaginal delivery, women who underwent CDMR had similar short-term maternal outcomes with some neonatal benefit. There are some concerns about lactation after cesarean delivery, however, at 3 months and 24 months after delivery, breastfeeding rates seemed not to differ by mode of delivery.

Long-term benefits

Urinary incontinence is reduced if elective CS is performed before the onset of labor but this protective benefit is reduced with age and subsequent pregnancies regardless of mode of delivery. Postpartum urinary incontinence may have a multifactorial origin.

Anal incontinence and sphincter defects are not noted after elective CS. CS may decrease the risk of pelvic organ prolapse.

Benefits of CDMR on fetus

The studies have shown certain fetal benefits for elective cesarean section:

There is some weak quality evidence of a **lower risk of neonatal encephalopathy** and **asphyxia** with elective

cesarean delivery without labor compared with the combined risks of spontaneous vaginal delivery, operative vaginal delivery, emergency cesarean delivery, and cesarean delivery with labor.

Brachial plexus injury (Erb's palsy) and other birth injuries may occur after cesarean section but are unequivocally greater after vaginal birth.⁷ with the highest incidence for assisted vaginal delivery. The **incidence of fetal laceration** at the time of cesarean delivery is lower for elective cesarean delivery without labor (0.8%) than unscheduled cesarean delivery (1.4–1.5%).

Perinatal mortality from elective CS (Cesarean Section) has been quoted at 10 times lower than that from vaginal birth. Approximately 1.4 in 1000 can be expected to have an antenatal, intrapartum or neonatal death after 39 weeks gestation, increasing to 4.6/1000-at 41 weeks gestation. These deaths will be avoided by elective prelabour cesarean sections.

Cerebral palsy can be expected to affect approximately 1 in 1000 term births. Of these, only 10% are felt to have an intrapartum origin but a further unknown percentage are the consequence of 'late antenatal' events that might be prevented by elective cesarean section.

Conclusions in favor of CDMR

Emergency cesarean section can be more hazardous than the elective procedure and it may be safer for the mother in the index pregnancy to perform an elective procedure than to attempt vaginal birth where the likelihood of achieving vaginal birth is not high. The risks of complication from elective CS (7%) is approximately half that of emergency CS in labor (16.3%) and instrumental vaginal deliveries (12.9%).

Considering these short-term and long-term benefits, it seems prudent to allow women who request an elective Cesarean Section without any obstetric indication.

Suggested Reading

- N. Mariyappa, A. Balagurusamy, Talasila S. Cesarean Delivery at maternal request in a rural medical college hospital. *J Clin Gynecol Obstet*, 2016; 5 (2) : 64-67.
- Nygaard. Urinary incontinence: is cesarean delivery protective? *Semin Perinatol*, 2006; 30 (5): 267-271.
- L. Brubaker. Postpartum urinary incontinence. *BMJ* (2002);324 (7348): 1227-1228.
- N. Badawi, J.J. Kurinczuk, J.M. Keogh, *et al.* Intrapartum risk factors for newborn encephalopathy: the Western Australian case-control study. *BMJ* 1998; 317 :7172: 1554-1558.
- D.Towner, M.A. Castro, E. Eby-Wilkens, W.M. Gilbert. Effect of mode of delivery in nulliparous women on neonatal intracranial injury. *N Engl J Med*, 1999; 341 (23) : 1709-1714.
- G.D. Hankins, S.M. Clark, M.B. Munn. Cesarean section on request at 39 weeks: impact on shoulder dystocia, fetal trauma, neonatal encephalopathy, and intrauterine fetal demise. *Semin Perinatol*, 2006; 30 (5): 276-287.
- G.C. Smith, J.P. Pell, A.D. Cameron, R. Dobbie Risk of perinatal death associated with labor after previous cesarean delivery in uncomplicated term pregnancies. *JAMA* 2002; 287 (20): 2684-2690.
- R.C. Fretts, E.B. Elkin, E.R. Myers, L.J. Heffner. Should older women have antepartum testing to prevent unexplained stillbirth? *Obstet Gynecol* 2004; 104 (1): 56-64.
- S.P. Walker, E.A. McCarthy, A. Ugoni, A. Lee, S. Lim, M. Permezel. Cesarean delivery or vaginal birth: a survey of patient and clinician thresholds. *Obstet Gynecol*, 2007; 109 (1) : 67-72.
- E. Blair, F. Stanley. Aetiological pathways to spastic cerebral palsy. *Paediatr Perinat Epidemiol* 1993; 7 (3): 302-317.
- M. Allen, C.M. O'Connell, R.M. Liston, T.F. Baskett. Maternal morbidity associated with cesarean delivery without labor compared with spontaneous onset of labor at term. *Obstet Gynecol*, 2003; 102 (3): 477-482.

C-section on Demand: Not just a matter of choice

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Choice is central to women's health and it is a fundamental social and constitutional right for all women. However, notions of choice can be misused or misunderstood, in particular when we are speaking of how women give birth, and whether Caesarean sections will be made available "on demand."

While their views differ somewhat, both parties agree that if a woman has been advised of the risks and benefits of an elective C-section for her first pregnancy, and has no other medical complication, the choice should be hers.

All this talk of informed choice is curious. For starters, research on medically unnecessary elective C-sections for first pregnancies is sparse, and there is general agreement that we lack the full information needed to assess the risks of Caesarean sections for women and their babies when these are not medically needed. How can physicians view C-sections as a possible option when critical data about the effects of this unnecessary surgery are missing or incomplete?

When we are focused on pregnancy and birth, both normal experiences, it would seem especially important that we follow a precautionary principle and reject the use of procedures whose safety has not been clearly demonstrated, not offer them *ad lib*. For a physician to say merely that a C-section is a woman's choice would seem to reflect not so much paternalism, which we all reject, but some refusal of professional responsibility.

More than the biomedical facts are involved. Reportedly, a growing number of women request planned C-sections for reasons of convenience or because of worry about labour, fear of pain, or fear of harm to themselves or the baby. There is a paradoxical notion that surgery and its after-effects are a means to avoid pain.

Pregnant women do have concerns about what the birth will be like and do hope for a healthy baby. But there are good ways to deal with these worries that do not involve unnecessary surgery. Why not make *these* true options for women?

For example, why do we ignore women when they ask to give birth with a midwife, to have a doula (a trained support person for women in labour), to give birth at home, in a birth centre or even in their own community? To have one-to-one care from a labour and delivery nurse?

How do we ensure access to the programs and the people who can help women be comfortable and secure with their own bodies? How can we provide reassurance, support and comfort for vaginal deliveries, and not turn immediately to surgery? These are the questions we should be asking, and the options we should be making fully available to all women.

The issue of C-sections is not just a matter of choice, but a wake-up call to compromised care for pregnant women, and inattention to their needs. We must address this situation and do more, lots more, to improve the safety and circumstances of vaginal births. More importantly, we need to use the most appropriate responses -- social and societal supports, primarily -- to address women's birthing needs and leave surgical interventions for when they are truly medically necessary.

For years, lowering the rate of Caesarean sections has been a goal of pregnancy care. Thus, it is surprising to see health practitioners and professional organizations speaking now in favour of C-sections on demand. It is of even greater concern that women might request unnecessary surgery and see this as a choice. What a strange turn of events after decades-long fights against the medicalization of our bodies.

Thus, instead of debating merely the pros and cons of C-sections on demand, we would be wise to ask, as we should ask whenever a procedure (or drug) is proposed as an option: What is the problem, and what are the non-technical ways of addressing it? Only when these non-technical (and non-drug) choices are exhausted, non-existent, harmful or otherwise inappropriate, should the high-tech road be taken.

Consumer choice may make sense at the supermarket or car salesroom. It is not a model for doctor-patient relationships. In some (increasing) circumstances, choice may actually be a risk to women's health and well-being. Constantly expanding a list of options for women is too often primarily to the benefit of the list-maker. This may apply to C-sections, too.

Soil and Seeds are Ripe for Uterine Transplant in India

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Introduction

Infertility due to a lack of anatomical uterus or functional uterus, i.e. an inability of the uterus to carry a pregnancy, has eluded reproductive medicine for a long period of time. Uterine factor infertility is estimated to affect one in 500 women worldwide and can be caused by either congenital Müllerian malformations, such as in the Mayer–Rokitansky–Küster–Hauser (MRKH) syndrome, or more commonly acquired as in the cases of women suffering from Asherman's syndrome, pregnancy interfering myomas, or hysterectomies. Since no successful treatment has been available for absolute uterine factor infertility, the options for these women to become mothers have been either to adopt or to go through with gestational surrogacy, a procedure that is currently banned in many countries.

Until recently, only life and death situations warranted organ transplantation. Non-vital transplantation simply to fulfill a patient's wishes or goals was not considered justified. It can be argued, however, that this distinction is not morally significant. Patients with kidney failure, for example, can be kept alive by dialysis, but their quality of life can be greatly enhanced by kidney transplant, which is thus considered a justified procedure. So, a spectrum of rationales may justify transplantation.

Although only few cases of successful uterine transplantation have been reported, these cases represent a huge advance in the field of reproductive medicine, allowing pregnancy in patients with no other alternative.

Rationale behind Uterine Transplant

During the past three decades, scientists have made tremendous efforts to solve infertility problems; indeed, the achievements and developments that have occurred in this field have had a considerable clinical impact. A significant body of global knowledge on solid organ transplantation has now been acquired and validated, establishing fertile grounds for the development of new surgical procedures. Better surgical technology and better understanding of immunosuppressive therapy, preventing severe adverse side effects, are factors contributing to this improvement.

Uterine transplantation is supported by gynaecologists who believe that advancement in microsurgery and immunology may allow the achievement of good results without major side effects or risks for the transplanted mother and her foetus. Two frontiers clearly lie in the path of progress of further development in uterine transplant. One is improving and optimising immunosuppression techniques. The second is to develop an ideal vascular model for uterine transplant, its survival and functionality and subsequent pregnancy.

While other organ transplant donations most often come from cadavers and less often from living donors (kidney or partial liver), the donor source for a uterus may be an otherwise healthy living patient who requires uterus removal as a care procedure. Furthermore, it should be mandatory to remove the transplanted uterus from the recipient after successful pregnancies so the patient need not be subjected to lifelong antirejection medications.

Indications for uterine transplantation

Causes of uterine factor infertility that may be treatable by uterine transplantation:

1. No uterus
 - o Congenital uterine absence (Müllerian agenesis/Mayer-Rokitansky- Küster-Hauser (MRKH)-syndrome)
 - o Hysterectomy
 - Cervical/uterine malignancy

- Leiomyoma
 - Obstetric bleeding
 - Atony
 - Malplacentation (placenta accreta/percreta)
 - Uterine rupture
2. Uterus present
 - o Leiomyoma
 - o Adenomyosis
 - o Multiple miscarriage/implantation failure
 - o Radiation damage
 - o Uterine malformation-unicornuate, bicornuate, Hypoplastic uterus
 3. Cervical incompetence with multiple miscarriages
 - o Post multiple conisation procedures
 - o Post trachelectomy procedure
 - o Intrauterine adhesions not treatable by hysteroscopic resection

Controversies

Unlike other organs, which are supplied by large blood vessels, the uterus receives its blood supply from a network of tiny vessels. This means that establishing a blood supply for the transplanted organ is extremely complex and prone to problems. In addition, blood vessels supplying the uterus must be able to expand to three times their normal size during pregnancy if they are to support a developing foetus.

Simple noninvasive techniques, such as Doppler ultrasound, to monitor and detect early rejection are essential. Cyto-immunological monitoring for activated lymphocyte subpopulation (CD3/CD4) cell ratio using monoclonal antibodies is a simple, noninvasive technique to monitor rejection, with sensitivity and specificity approaching 96% and 88%, respectively. Punch biopsy from the endocervix to detect and histopathologically grade rejection seen as myocyte necrosis and perivascular infiltration of lymphocytes is an invasive procedure that could be associated with certain risks.

The Indian Scenario

A recent article in the Indian Journal of Medical Ethics (IJME) on uterine transplants points out that among all the 25 surgeries conducted worldwide, only nine have been successful and a total of six children have been born through the procedure. For this reason, and for the fact that the biomedical industry in India is notorious for its lack of regulation, it is necessary to discuss these issues.

India's medical fraternity has watched with caution as a Pune's Galaxy Care Laparoscopy Institute (GCLI) conducted a successful womb transplant in July 2017, the first surgery of its kind in the country. The Maharashtra directorate of health services granted GCLI, the license to carry out womb transplantation for five years after inspecting its facilities in April this year. Bangalore-based Milann International Institute for Training and Research in Reproductive Health has also received approval from Indian Council of Medical Research for womb transplantation on two women.

In India, the primary legislation dealing with organ donation and transplantation is the Transplantation of Human Organs Act, 1994. The Act aims at regulating the removal, storage and transplantation of human organs for therapeutic purposes and prevention of commercial dealing with regard to the organs.

Conclusion

With this uterine transplant, medical science has certainly made great strides. To some individuals, childbearing is the greatest event of a life-time. To such persons, transplantation of organs of reproduction would not be considered frivolous or unnecessary even though these organs do not sustain life. Further clinical experience and additional development of the surgical techniques could make uterine transplantation useful in the treatment of infertility, especially in communities where the surrogate mother concept is unacceptable from a religious or ethical point of view.

Nevertheless, uterus transplantation is an experimental treatment method with an ambition to become accept-

ed treatment modality for women with absolute uterine factor infertility.

Suggested Reading:

1. Fageeh W., Lucchini G. (2007) Uterus Transplantation. In: Lanzetta M., Dubernard JM., Petruzzo P. (eds) Hand Transplantation. Springer, Milano.
2. Brännström M, Wranning CA, El Akouri RR. Transplantation of the uterus. Mol Cell Endocrinol 2003;202:177–184
3. Erman Akar M, Özkan Ö, Aydinuraz B, Dirican K, Cincik M, Mendilcioglu I, Simsek M, Gunseren F, Kocak H, Ciftcioglu A, Gecici O, Özkan Ö. Clinical pregnancy after uterus transplantation. Fertil Steril. 2013;100:1358–63.
4. Brännström M, Johannesson L, Dahm-Kähler P, Enskog A, Mölne J, Kvarnström N, Diaz-Garcia C, Hanafy A, Lundmark C, Mar-cickiewicz J, Gäbel M, Groth K, Akouri R, Holgersson J, Tzakis A, Olausson M. The first clinical uterus transplantation trial: a six months report. Fertil Steril. 2014;101:1228–36.
5. Brännström M, Johannesson L, Bokström H, Kvarnström N, Mölne J, Dahm-Kähler P, Enskog A, Milenkovic M, Ekberg J, Diaz-Garcia C, Gäbel M, Hanafy A, Hagberg H, Olausson M, Nilsson L. Live birth after uterus transplantation. Lancet. 2015;385:607–16.
6. Johannesson L, Kvarnström N, Mölne J, Dahm-Kähler P, Enskog A, Diaz-Garcia C, Olausson M, Brännström M. Uterus transplantation trial: 1-year outcome. Fertil Steril. 2015;103:199–204.
7. Srinivasan S. Uterus transplants in India: yawning regulatory gaps. Indian Journal of Medical Ethics. 2017;2(3);135.

Soil and Seed are Ripe for Uterine Transplantation in India

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“Everything that glitters is not gold”

Organ transplantations are warranted only in life and death situations. Non vital transplantations simply to fulfill a patient’s emotional needs can not be considered justified that too in a country like India. Still in its nascent, experimental stage, only a handful of these operations have met with success in other countries, primarily in Sweden. The first uterine transplant in the U.S., which was performed in February last year on a 26-year-old woman from Texas, Lindsey MacFarland, at a Cleveland clinic in Ohio, failed despite the efforts of a team of highly experienced doctors who had practised on animals and cadavers. In April 2000, a woman who received uterus transplant in Saudi Arabia (considered to be the world’s first uterus transplant) needed the organ removed barely three months after the operation.

Scientific evidence is not enough to support the wide spread use of uterine transplantation in current clinical practice. The rigorous process of undergoing a transplant surgery, immunosuppression, ART, LSCS and hysterectomy to have a biological child needs to be ethically considered before widespread dissemination this surgical gimmick.



All Fibroids Seen During Caesarean Section Must be Removed Against the Motion

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Fibroids are observed in 2.7% to 12.6% of pregnant women¹. Majority of fibroids do not cause any problem during pregnancy. Approximately one-fourth of women with fibroids experiencesymptoms that require treatment.²Bonney V. reported the first caesarean myomectomy case in 1913.³After a century of the first case report, myomectomy during caesarean delivery is not advised by obstetrics textbooks due to risks of haemorrhage and increased morbidity. Someauthors suggest that every effort should be made to avoid surgical removal of fibroids in pregnancy because of the riskof significant morbidity.⁴Women who have successfully carried a pregnancy to term probably do not fulfill the indications for medical or surgical intervention for their fibroids. In the last decade, there are few retrospective studies indicating that myomectomy during cesarean section is safe and improves outcome in later pregnancies.⁵ Therefore, fibroids encountered during caesarean section pose a therapeutic dilemma.The strategy of avoiding cesarean myomectomy is gradually changingto caesarean myomectomy in carefully selected cases and not all.

Hassialosevaluated the safety and efficacy of myomectomy during caesarean section in 47 women and concluded that in selected patients and in experienced hands, myomectomy during cesarean delivery is generally a safe procedure.The study highlighted that the length of hospitalization was comparable between the study and control group. Myomectomy added a mean time of 15 minutes to the operating time of caesarean section. The decision whether to intervene depends mainly on the location of the fibroidand the surgeon's experience. If the myoma is located in the area of the uterineincision, it can be safely removed with an easy and bloodless procedure.There is no doubt that large, fundal, intramural fibroids in the vicinity of thetubes should be avoided. Intramural fibroids in general should be excised withcaution. The results indicate that removing accessible subserosal or pedunculated fibroid is a safe procedure.⁶

Machado presented a series of 8 cases, where myomectomy was performed during caesarean section for large lower segment fibroid which interfered with the closure of uterine incision.Regarding intra-operative blood loss,1 patient lost 900 ml, 5 patients lost 1–1.5 liters, 2 lost 1.5–2 L, and 1 patient with a 10 x 12 cm fibroid lost 3.2 L.Despite the majority being large myomas (7 of the 8 patients had myomas>5 cm in size) and 50% being intramural,no hysterectomy was required. Stepwise devascularisation was necessary in one case and preoperative placement of uterine balloon catheters was necessary in another. Blood transfusion was required in 50% of cases. This caseseries also concluded that in selected patients, myomectomy during Caesarean section is a safe and effective procedure at tertiary centers with experienced surgeons.⁷

Most of the recent studies do not show increase incidence of hysterectomy but it is not unknown during an attempt for caesarean myomectomy.Exacoustos and Rosetti reported that in their series of 9 cases of Caesarean myomectomy, three were complicated by severe haemorrhage necessitating hysterectomy; hence, they recommended caution while making the decision to perform this procedure.⁸

In their retrospective study, on 63 patients who underwent myomectomy during caesarean section, Akbasetal concluded thatduration of operation was longer ($p<.001$) and haemoglobinloss was higher ($p=.01$) in the myomectomy group. There was no difference between one incision andtwo incisions subgroups in terms of mean haemoglobin change ($p=.068$). Haemoglobin loss washigher infibroids with volume $>50\text{cm}^3$ group than fibroid with volume $<50\text{cm}^3$ and control groups. These differences werestatistically significant ($p=.02$; $p=.001$,

respectively). Although intramural fibroids can be safely removed during caesarean section, large fibroids and extra incisions for myomectomy are risk factors for haemorrhage.⁹ Most of the studies conclude that selection of patient is crucial with experienced surgeon together with the backup of tertiary centre. Selected fibroid which can be removed are those fibroids obstructing the lower uterine segment or accessible subserosal or pedunculated fibroids in symptomatic patients can be safely removed. Due to lack of multicentric randomized trials, appropriate selection criteria, surgical techniques and national and gynecological society guidelines it is too early to knife all fibroids during caesarean section.

References:

1. Klatsky PC, Tran ND, Caughey AB, Fujimoto VY. Fibroids and reproductive outcomes: a systematic literature review from conception to delivery. *Am J Obstet Gynecol.* 2008;198:357-66)
2. Boynton JR, Rich-Edwards J, Malspeis S, Missmer SA, Wright R. 2005. A prospective study of hypertension and risk of uterine leiomyomata. *American Journal of Epidemiology* 161:628-638
3. Bonney V. 1913. A case of caesarean section; with remarks on the operation. *Journal of Obstetrics and Gynaecology of the British Empire* 24:311-312)
4. Ouyang DW, Norwitz ER. 2014. Pregnancy in women with uterine leiomyomas. In Lockwood CJ. (Ed.), *UpToDate*.
5. Song D, Zhang W, Chames MC, Guo J. 2013. Myomectomy during cesarean delivery. *International Journal of Gynecology and Obstetrics* 121:208-213.
6. Hassiakos D, Christopoulos R, Vitoratos N, Xarchoulakou E, Vaggos G, Papadrias K. Myomectomy during Cesarean section: a safe procedure? *Ann N Y Acad Sci* 2006; 1092:408-13. Doi:10.1196/annals.1365.038)
7. Machado LSM, Gowari V. Caesarean myomectomy Feasibility and Safety. *SQU MED J*, May 2012, Vol.12, Iss.2
8. Exacoustos C, Rosati P. Ultrasound diagnosis of uterine myomas and complications in pregnancy. *Obstet Gynecol* 1993; 82:97-101).
9. Akbas M., Mihmanli V. Myomectomy for intramural fibroids during Caesarean section: A Therapeutic dilemma. *Journal of Obstetrics and Gynaecology* 2016

Debate (for): Egg Freezing Before 30: Sure shot way of achieving future pregnancy

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Oocytes cryopreservation for fertility preservation has seen a boon in world of ART. Its a breakthrough for women as they do have a hope to aspire their career oriented goal. This is infact a move towards gender equality. Because the current social trend is to delay child bearing until career goals are met, an increasing number of women are interested in oocyte cryopreservation as a means of preserving their fertility.

In relation to the life expectancy of modern humans, women stand to lose their natural fertility at a relatively early age. Given the many demands calling for simultaneous realization in a relatively short period of their lives, many women who want to have children feel to be under considerable pressure. Oocyte cryopreservation may give them more breathing space. For men, combination of fatherhood with other life plans is not as difficult. Sperm banking is also commercially available as a means of preserving reproductive capacity to men in jobs or sports that pose a possible threat to their fertility. For A feminist perspective, therefore the availability of option for female fertility preservation can be regarded as an important step towards greater reproductive justice.

Since the introduction of oocyte vitrification by Kuyawama et al in 2005¹, there has been a growing body of evidence on oocyte cryopreservation for both elective and medically indicated fertility preservation². The earlier apprehension about the risk of aneuploidies in vitrified oocytes was clearly undone in study using application of microassay based DNA finger printing which compared implantation rates of oocytes from same cohort³. Since the changes in cryopreservation techniques and introduction of ICSI the success rates of pregnancies and implantation rates are becoming more and more comparable between fresh and cryopreserved oocytes³.

As this technology is becoming more and more refined, increasing number of ART facilities are offering oocytes cryopreservation to young fertile women as means of insurance against their biological clock. A survey conducted in US regarding oocyte cryopreservation, where 218 clinics participated in survey, 100 percent of clinics were for cryopreservation before 35 years of age⁴.

References

1. Kuwayama M, Vajta G, Kato O. Highly efficient vitrification method for cryopreservation of human oocytes. *Reprod Biomed Online* 2005; 11:300-8
2. Noyes N, Porcu E, Borini A. Over 900 oocyte cryopreservation babies born with no apparent increase in congenital anomalies. *Reprod Biomed Online* 2009;18:769-76
3. Treff NR, Su I, Tao J, Miller KA. A novel single-cell DNA finger printing method successfully distinguishes sibling human embryos. *Fertil Steril* 2010;94:477-84
4. Briana Rudick, M.D., Neisha Opper. The status of oocyte cryopreservation in the United States. *Fertility and Sterility*. 2010;94:7

Freezing the Eggs before 30: A sure shot way of achieving pregnancy: Against

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Freezing the eggs for non medical or social reason also termed as *Age Banking* is against the law of nature and play with motherhood. Delaying the maternity has its social bearings, financial impacts and medical implications. Why should we medicalise the nature and natural reproductive process?

In 2014, Apple, Facebook and many big companies played a management drama to keep their young workforce in work place and gave them a big offer and funny concept "freeze your eggs and not your future" with insurance cover too! This lucrative offer and brilliant idea made an impact and thus, without a forethought medicalisation of natural motherhood started.

The egg freezing process is not a quick and easy procedure. It involves stimulation with gonadotropins for nearly two weeks, ovum pick up under anaesthesia, vitrification and thawing until further usage for pregnancy. Again for freezed, thaw and embryo transfer cycle, unnecessary estrogens to prepare endometium and progestrones for luteal phase support are given in supraphysiological doses to enhance implantation, still the best embryos may fail to implant in 50% of cases.

Importantly fertilisation requires ICSI due to hardening of zona and again interference with the natural selection process in fertilizing an egg. It is yet unclear that certain genetic problems maybe passed to offspring. These

pregnancies are high risk medically and emotionally challenging with undue pressure, Whereas when the woman conceives naturally in peak and naturally best reproductive phase, it is a low risk pregnancy with minimum medicines, negligible complications and best maternal and fetal outcome.

A natural physiological process is changed to undue complicated process involving the best of reproductive medicine specialists, infrastructure and finances too. Moreover, the process is not 100 % as the likelihood of each frozen egg resulting in a live birth has also been reported to vary, from ~4-14% (Chang et al., 2013; Goldman et al., 2013).

So in large majority, Age banking gives false assurances to plan later and in case of failure of frozen thawed oocytes, her own reserves are also exhausted. This unfortunate event forces her to opt for gamete donation or adoption or complete deprivation of motherhood.

Definitely oocyte freezing will unnecessary expose a large no of women to unnecessary ovulogens and gonadotropins exposure, along with some infrequent risks of pelvic and abdominal pain; injury to the bladder, bowels, or blood vessels; pelvic infection; damage to the ovaries; and ovarian hyper-stimulation syndrome.

Although limited data available suggests no increased risk of chromosomal anomalies or significant physical or developmental deficits in the babies created (Chian et al., 2008; Cobo et al., 2014; Setti et al., 2013), although Setti et al (2013) did find higher miscarriage rates in pregnancies with frozen thawed eggs in infertile patients. Long-term studies for children born from such process for increased cancers and structural cardiac problems, are still awaited, there being only approximately 2,000 babies born worldwide from cryopreserved eggs.

The pregnancies resulting from vitrified eggs are high risk pregnancy as carrying pregnancy in advance age itself increases the chance of hypertensive disorders, gestational diabetes, placenta praevia, miscarriage, and prematurity. As normally minimum 2-3 oocytes are thawed and subjected to ICSI to achieve 2-3 embryos ; there are more chances of multiple pregnancies and related maternal morbidity and perinatal complications. Additional risks linked to children born through ART include higher instances of preterm birth, low birth weight, stillbirth, neurological impairments like cerebral palsy, and increased associated risks of up to 28 percent of certain birth anomalies, especially of the eyes, neck, heart, and urogenital tract.

Freezing oocytes just deals with one gamete but totally ignores the male factor which accounts for 40% of infertility and does not address endometrial factor at all. Clinical pregnancy is a complex interplay of both gametes, endometrium and internal milieu.

Another big and important issue is Informed Consent and other legal implications too

- transparency regarding what the process entails (physical, emotional, risks to self and baby, cost, conditions for storage);
- age and facility specific information about success, and success rate specifically defined for fertilization, implantation, pregnancy rates, miscarriage rate and take home baby rate.
- to be informed about the long term safety of this technology .
- information about disposition options for her leftover oocytes;
- information about alternatives to egg freezing to preserve her fertility and to create a family.

American College of Obstetricians and Gynecologists (ACOG) also does not endorse egg freezing for the "sole purpose of circumventing reproductive aging in healthy women." In joint practice guidelines ASRM and SART have cautioned against the use of egg freezing as a guard against age related fertility decline, owing to the limited data about safety, efficacy, cost effectiveness and emotional risk of egg freezing of healthy woman of reproductive age.

The ASRM–SART practice guideline estimates that the survival rate of oocytes after vitrification and thawing is 90%–97%, the fertilization rate is 71%–79% and the implantation rate is 17%–41%. The clinical pregnancy rate per vitrified and thawed oocyte is 4.5%–12%. The above real time statistics itself endorse against egg freezing for all for delaying pregnancy as an option/substitute for natural timely conception.

Egg freezing is highly cost inefficient and undesirable process, adding lot of unnecessary financial burdeon on couple /institution or society as being promoted as a substitute for a natural phenomenon. Probably, to promote ART clinics for commercial gains for unethical, unnatural, unnecessary and undesirable procedure.

This process consumes lots of efficient manpower and expertise for this unwarranted medical procedures as stimulation, follicle study, ovum pick up, vitrification, storage, thawing and then embryo transfer. Egg freezing is invasive and it comes with serious short- and long-term physical and mental health risks.

Freezing the oocytes should always be used for preserving fertility when indicated, however misuse of technology must be withheld. The wrong notion in medical science should not be promoted and permitted. Egg freezing is neither synonym nor equivalent to take home baby. Egg freezing is a drama under the name of insurance, play with genetics, money and retaining the forceful youth for company benefits.

It is not modern maternity but unnecessary medicalising natural motherhood. Statement should be: **“Fertility before Thirty”** rather freezing before thirty and not reversal of biological clock on false assumptions and unrealistic hope.

Management of Adenomyosis in Women under 35

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Adenomyosis is a benign disorder which is characterized by the presence of heterotopic endometrial glands and stroma in the myometrium. On the basis of myometrial invasion extension, it can be either *diffuse* or *focal*. Adenomyosis has a negative impact on the fertility of women. Chiang et al (1999) found that the spontaneous abortion rate was higher in women with a diffusely enlarged uterus on ultrasound imaging without distinct uterine masses compared with those with a normal uterus. Piver et al (2010) also proposed that an increase in Junctional Zone diameter is inversely correlated to implantation rate. approximately 20% of cases of adenomyosis involve women younger than 40 years

Treatment for adenomyosis in women less than 35 can be either medical or conservative surgical management. Medical treatment is aimed at reducing the production of endogenous estrogen or inducing endometrial differentiation with progestins. The objectives of medical treatment are the inhibition of ovulation, abolition of menstruation, and achievement of a stable steroid hormone milieu, based on the concept that the responses of the eutopic and ectopic endometria are substantially similar

GnRH Agonists- They act by binding to GnRH receptors in the pituitary gland, thereby resulting in down-regulation of GnRH activity. It decreases expression of aromatase cytochrome p450 and of nitric oxide synthases in the eutopic endometrium of women with adenomyosis, as these enzymes are overexpressed in adenomyosis. There is a reduction in uterine volume and amenorrhoea, and relief of severe dysmenorrhoea. Goserelin and leuprolide are two commonly used GnRH agonists. Goserelin is used in doses of 3.6 mg once every 4 weeks or 10.8 mg once every 12 weeks, and is injected subcutaneously. Leuprolide can be given as a daily dose of 0.5 to 1 mg or monthly depot of 3.75 mg or even can be given 3 monthly in a dosage of 11.25 mg. It can be injected subcutaneously or intramuscularly.

Progestogens- Women with adenomyosis are characterized by a lower expression of progesterone receptors. Norethisterone acetate (2.5 mg per day) is associated with a marked degree of pain relief. Cochrane database systematic review showed that the progestogens (100 mg medroxyprogesterone (MPA) daily) more effectively reduced the symptoms during a period of 12 months follow-up. Drawback of progestin therapy are adverse side effects as break through bleeding, fluid retention, mood changes, breast tenderness and weight gain.

Dienogest- It directly inhibits cellular proliferation and induces apoptosis in human adenomyotic stromal cells. Adenomyosis patients treated with dienogest are at higher risk of discontinuation owing to uterine bleeding.

Oral contraceptives(OCP's)- They suppress endometrial growth and retrograde menstrual flow. Continuously administered monophasic low dose OCP's with withdrawal bleed every 4-6 months are effective in relieving menorrhagia and dysmenorrhea, also have the advantage of being effective with low cost and high patient compliance, and minimal side effects.

Selective progesterone receptor modulators (SPRMs)- reduce adenomyosis associated pelvic pain, and are possibly more effective than progestins. Two SPRMs are currently prescribed are mifepristone and ulipristal acetate (UPA). It is possible that mifepristone induces apoptosis of endometrial cells by activation of caspase-3 expression.

Ulipristal Acetate(UPA)- It induces amenorrhea and also has a direct effect on adenomyotic foci, so it could potentially be of use in adenomyosis-related heavy uterine bleeding. Prolonged treatment with UPA has shown to induce non-physiologic changes in the eutopic endometrium (progesterone receptor modulator associated endometrial changes [PAEC]). UPA is given in a dose of 5mg to 10mg daily dose. The treatment courses should each not exceed 3 months as the risk of adverse impact on the endometrium is unknown if treatment is continued without interruption. Repeated intermittent treatment has been studied up to 4 intermittent treatment courses.

Danazol- Its use results in an androgenic and hypoestrogenic environment and due to this effect on adenomyotic lesions they are helpful in reducing pain during and after therapy. Minimal dose of 200mg per day seems optimal.

Hormone containing IUD'S-Levonorgestrel Intrauterine System (LNG-IUS)

It is approved for treating women with adenomyosis who have completed their childbearing. Levonorgestrel intrauterine system causes atrophy of the eutopic endometrium; has a progestogenic influence on adenomyosis foci and the treatment leads to decreased pain and heavy uterine bleeding.

Aromatase inhibitors- Badawy *et al* have confirmed that aromatase inhibitors are as effective as gonadotropin-releasing hormone agonists in reducing adenomyoma volume and improving symptoms.

Uterus sparing conservative procedures- In contrast to uterine fibroids, adenomyosis is not demarcated from the adjacent myometrium by a capsule. Thus, there is difficulty in demarcating the extent of myometrial involvement and thus, patients with adenomyosis were considered poor candidates for conservative surgery. But recently, novel methods of uterus sparing procedures have changed the management and fertility outcome in patients with adenomyosis.

Magnetic resonance-guided focused ultrasound surgery (MRgFUS)- is a non-invasive technique for the ablation of soft tissue that offers a new approach to conservative non-invasive uterine surgery. It has been used successfully over the past years for the conservative treatment of adenomyosis, without damage to surrounding healthy myometrium and without major morbidity. Sequential ultrasound beams are precisely focused on a series of small foci within the larger target volume to locally heat tissue under real-time MR guidance and control, causing thermal coagulation and subsequent tissue necrosis in a precisely defined area. Rabinovici *et al* (2006) reported a case of a 36-year-old woman with infertility with abnormal uterine bleeding, diagnosed with adenomyosis. Following an uncomplicated MRgFUS treatment, she conceived spontaneously and, after an uneventful pregnancy, gave birth at term to a healthy infant via normal vaginal delivery. No structural uterine abnormality was detected after her delivery.

Operative hysteroscopy- can be used in cases of superficial adenomyotic nodules and for diffuse superficial adenomyosis. An improvement of dysmenorrhea and menorrhagia is achieved in more than 81% and 50% of the patients, respectively (Grimbizis *et al* 2014)

Uterine artery embolization (UAE)- is a vascular imaging-guided procedure. A catheter is used to deliver small particles to block the blood supply to targeted lesions, which are selected based on the diameter of the uterine artery and the degree of blood supply to the lesion. This procedure is advantageous because it is minimally invasive and maintains the patient's fertility. The short-term and long-term improvement rates are 74.0% & 70.4% for dysmenorrhea and 70.9% & 70.4% (W. *Et al* 2016)

Excision of the adenomyoma and hysteroplasty using laparoscopy or laparotomy-

A retrospective study of 104 patients undergoing conservative surgery compared the classical adenomyomectomy with a technique, the H-incision surgery (Fujishita *et al.*, 2004) The classical technique involves incision of the uterine wall and a stepwise resection of adenomyomatous tissue. The newer technique consists of an H-shape incision and excision of the adenomyomatous tissue. Results of the study were directed in favor of the newer technique which resulted in one spontaneous pregnancy 4 months after operation compared with no pregnancy in women undergoing the classical technique. Flap technique is used for focal localized adenomyosis. Conservative surgery or combination treatment in subfertile women with adenomyosis also had significant benefits for not only controlling symptoms but also for increasing the pregnancy rate compared with GnRH-a alone. The cumulative 3-year clinical pregnancy rate and final successful delivery rate were higher in adenomyotic women who underwent conservative surgery with or without GnRH-a compared with those who received GnRH-a alone for 6 months.

ADENOMYOSIS AND ART (Assisted Reproductive Techniques)

There are different conclusions of various studies pertaining to the results of ART in adenomyosis relating to the type of protocol used. Thalluri and Tremellen conducted a retrospective study in women with adenomyosis undergoing IVF cycle with an antagonist stimulation protocol. Their results show reduced clinical pregnancy rates in the adenomyosis group compared to the group without adenomyosis. Costello *et al.* used a long agonist stimulation protocol in IVF/ICSI cycles and found no difference in live birth rate per cycle between women with adenomyosis and controls. The use of long GnRH-a downregulation 3-6 months prior to IVF could have had an effect on the endometrium, correcting endometrial alterations related to the presence of adenomyosis and thus increasing live-birth rates.

To conclude adenomyosis can be treated either surgically or medically according to the age of the patient, the main symptoms, associated pathology and the women's desire for a future pregnancy.

References:

1. Streuli I, Dubuisson J, Santulli P, Ziegler D, Batteux F, Chapron C. An update on the pharmacological management of adenomyosis. *Expert Opin. Pharmacother.* (2014) 15(16):2347-2360
2. Takeuchi H, Kitade M, Kikuchi I, *et al.* Laparoscopic adenomyomectomy and hysteroplasty: a novel method. *J Minim Invasive Gynecol.* 2006; 13:150-154.
3. Fujishita A, Masuzaki H, Khan KN, *et al.* Modified reduction surgery for adenomyosis. A preliminary report of the transverse H incision technique. *Gynecol Obstet Invest.* 2004;57:132-138.
4. Ferrari F, Arrigoni F, Miccoli A, Mascaretti S, Fascetti E, Mascaretti G, *et al.* Effectiveness of Magnetic Resonance-guided Focused Ultrasound Surgery (MRgFUS) in the uterine adenomyosis treatment: technical approach and MRI evaluation. *Radiol Med* 2016;121:153-161.
5. Popovic M, Puchner S, Berzaczy D, Lammer J, Bucek RA. Uterine artery embolization for the treatment of adenomyosis: a review. *J Vasc Interv Radiol.* 2011; 22(7):901
6. Thalluri V, Tremellen KP. Ultrasound diagnosed adenomyosis has a negative impact on successful implantation following GnRH antagonist IVF treatment, *Hum Reprod.* 2012, vol. 158;229-234.
7. Costello MF, Lindsay K, McNally G. The effect of adenomyosis on *in vitro* fertilisation and intra-cytoplasmic sperm injection treatment outcome, *Eur J Obstet Gynecol Reprod Biol*, 2011, vol. 27; 3487-3492.

Hydrosalpinx: Tubal Surgery or in Vitro Fertilization ? An Everlasting Dilemma Nowadays

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Tubal factor accounts for 25-35% of the female factor infertility with more than half of the cases being due to pelvic inflammatory disease? Also, a history of ectopic pregnancy, endometriosis, myomas, or a prior pelvic surgery raises the index of suspicion for the tubal factor. Tubal damage from pelvic inflammatory disease causes long-term tubal changes such as fimbrial agglutination, phimosis and tubal obstruction leading to formation of hydrosalpinges either in one or both fallopian tubes. Distal tubal obstruction is more often observed (70%) than proximal obstruction. There is a need to determine the optimal methods for the patients with tubal factor. Numerous studies have shown that hydrosalpinges have a negative effect on pregnancy and IVF success rates. In a large meta-analysis of retrospective cases² (Camus et al 1999), women with hydrosalpinx had half the implantation, and delivery rates, and up to twice the incidence of spontaneous abortions after IVF and embryo transfer (IVF-ET).

Surgery remains an acceptable treatment modality for tubal infertility despite the rise in usage of in vitro fertilisation (IVF). Estimated livebirth rates after surgery range from 9% for women with severe tubal disease to 69% for those with mild disease³; however, the effectiveness of surgery has not been rigorously evaluated in comparison with other treatments such as IVF and expectant management (no treatment). Livebirth rates have not been adequately assessed in relation to the severity of tubal damage. It is important to determine the effectiveness of surgery against other treatment options in women with tubal infertility because of concerns about adverse outcomes, intraoperative complications and costs associated with tubal surgery, as well as alternative treatments, mainly IVF. Treatment options for hydrosalpinges include drainage, neosalpingostomy, salpingectomy, and aspiration of a hydrosalpinx under ultrasound guidance before an IVF-ET cycle or at the time of oocyte. It has been a big challenge to choose between tubal surgery or IVF for a patient having tubal obstruction or a combination of both. Recent literature, guidelines and committee opinions from previous years have compared the various treatment options for treating tubal factor infertility. Laparoscopic neosalpingostomy for draining hydrosalpinges before IVF-ET theoretically should improve pregnancy rates, but there are no confirmatory studies to date. Randomized clinical trials comparing pregnancy rates and outcomes with IVF in women with and without prior laparoscopic salpingectomy have consistently reported that salpingectomy restores pregnancy rates and live birth rates to those similar to women without hydrosalpinx⁴.

Therapeutic aspirations of hydrosalpinges have been reported; however, there is often rapid reaccumulation of fluid and the results whether or not its beneficial were conflicting and the conclusions weak. A Cochrane analysis of the three RCTs concluded that laparoscopic salpingectomy should be considered before IVF for women with communicating hydrosalpinges (2010).

IVF and endoscopic tubal surgery must be thought of as complimentary, rather than competing techniques in tubal disease cases, in order to improve fertility outcomes. Many variables need to be taken into consideration when counselling patients regarding treatment options. The age of the patient, ovarian reserve, prior fertility, number of children desired, site and extent of tubal disease, presence of coexisting factors, experience of surgeon and success rates of IVF programme are the most important. Patient preference, religious beliefs, cost also figure into the equation. The first line treatment for young women less than 35 years old with minor tubal pathology, is tubal surgery. IVF should be offered if there are other factors in a couple's subfertility, if the patient is > 38 years old, in moderate to severe tubal disease is present, and if it has been 12 months post surgery.

IVF and endoscopic tubal surgery must be thought as complimentary rather than competing techniques in the majority of tubal disease cases in order to improve fertility outcome. Tubal surgery should be at least discussed prior to starting IVF. Women should be counselled about the negative effect of hydrosalpinx on IVF outcome. The most recent national assisted reproductive technology registry data from 2012 noted a 32.2% live birth rate per cycle initiated in patients across all ages with tubal infertility, similar to the 29.4% rate overall (SART)⁵. Meaningful success rates with the various tubal surgical procedures are largely lacking. Furthermore, the results of tubal surgery and IVF are not directly comparable because surgical success rates is reported as pregnancy rate per patient, whereas IVF success rates are per cycle.

Laparoscopic surgery has a place in the diagnosis and a positive role in the treatment of hydrosalpinx, as there is a strong indication that laparoscopic salpingectomy or clipping should be proposed in those women that have bilateral disease or where hydrosalpinges are detected on an ultrasound. Laparoscopic salpingostomy, laparoscopic or hysteroscopic tubal occlusion and drainage of hydrosalpinx before or during oocyte retrieval should also be evaluated. There is still need for large randomised trials in order to have safer conclusions regarding dilemmas for the optimal management of infertility in women with tubal diseases.

References

1. Role of tubal surgery in the era of assisted reproductive technology: a committee opinion. Fertil Steril 2015
2. Camus E, Poncelet C, Goffinet F, Wainer B, Merlet F, Nisand I, et al. Pregnancy rates after in-vitro fertilization in cases of tubal infertility with and without hydrosalpinx: a meta-analysis of published comparative studies. Hum Reprod 1999;14:1243–1249.
3. Surgery versus IVF or expectant management for women with tubal infertility. Cochrane review 2017
4. A. Daniilidis et al Hydrosalpinx: tubal surgery or in vitro fertilization? An everlasting dilemma; journal of obstetrics and gynaecology 2017; 5 :550-556
5. Society for Assisted Reproductive Technology. Clinic summary report. April 22, 2015

Vaginal Versus Laproscopic Hysterectomy: The better route !

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Hysterectomy is the most common gynae surgery being performed world-wide and when it comes to choosing the route for the same, the minimally invasive approaches {both vaginal and laproscopic route} have a definite edge over open abdominal hysterectomy. The reason or the same is quicker post-operative recovery and a shorter hospital stay.

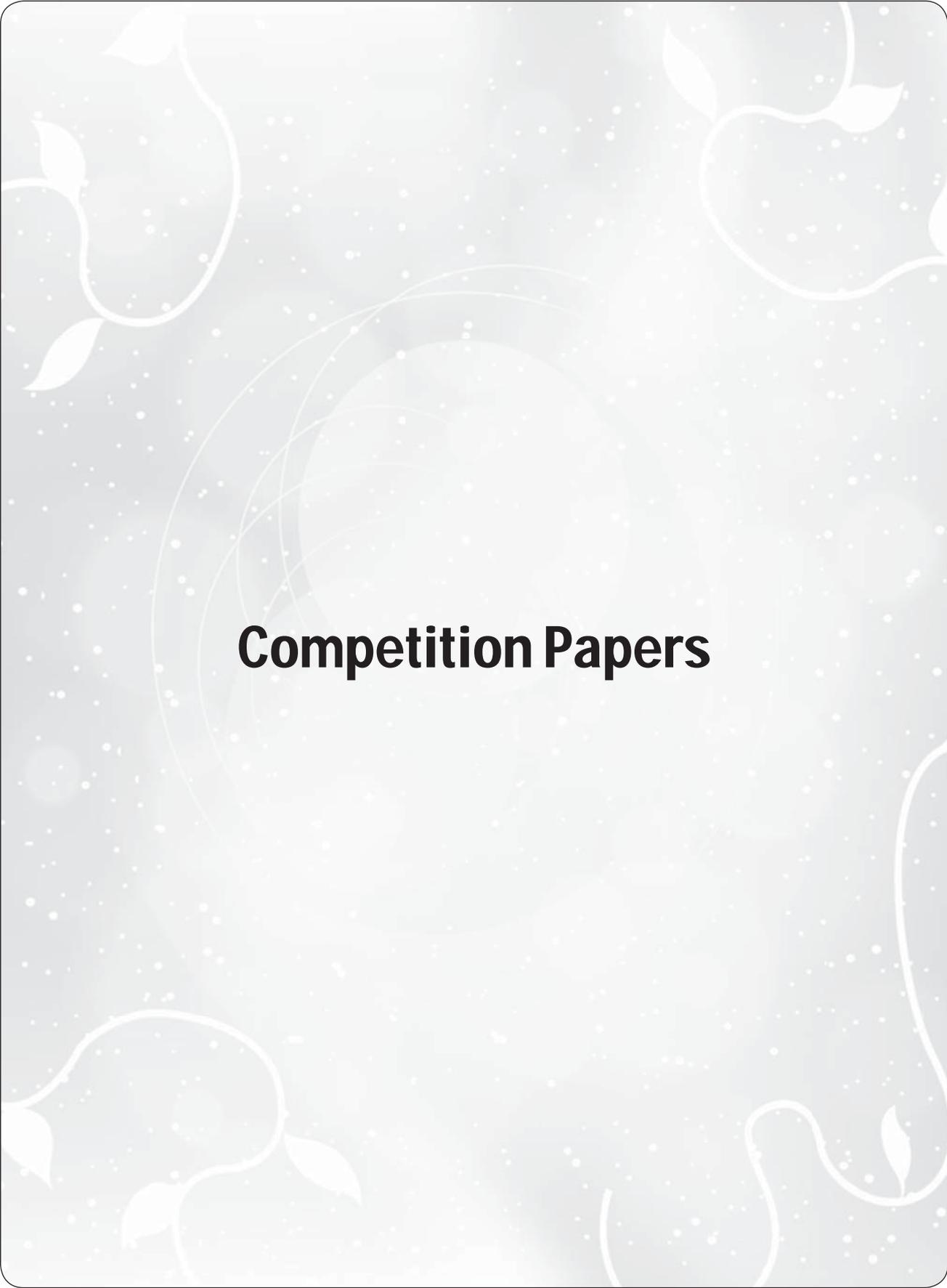
The latest Cochrane review on surgical approach to benign hysterectomy, has scrutinized the data of 27 randomized trials which aimed at evaluating the technical details as well as the simplicity, safety and acceptability of the procedure, both for the surgeon and the patient. The evidence supports that vaginal hysterectomy is associated with better outcome & is the most cost-effective method to remove the uterus. These large population based studies document that vaginal hysterectomies have a shorter duration of surgery & a lesser intra-operative blood loss. As far as bladder, bowel and ureteric complications are concerned, there is no statistical difference between the vaginal & laproscopic routes in expert hands. Both are associated with quicker post-operative recovery and reduced hospital stay. But, cost factor and the steep learning curve of laproscopic route, make vaginal hysterectomy the procedure of choice.



The ACOG also recommends vaginal hysterectomy as the procedure of choice and the laproscopic route to be resorted to only if vaginal route is not appropriate or feasible. The decision of route is dependent on many factors like indication of surgery, uterine size, presence & absence of extra-uterine pathology and importantly the patient's choice and surgeons skill and experience .But the best treatment option should be the one which is safest to the patient in a given clinical situation.

References

1. The American College of Obstetricians and Gynaecologists,Committee Opinion,Number 701,june2017
2. North American Clinics,September 2016
3. Raxita Patel et al. Laproscopic hysterectomy versus Vaginal hysterectomy

The background of the page is a light gray gradient. It features several white, stylized floral or leaf-like motifs scattered around the edges. In the center, there is a large, faint circular graphic composed of overlapping, thin white lines, resembling a globe or a complex geometric pattern. The overall aesthetic is clean and modern.

Competition Papers

[CP-1]

Evaluation of Trappin-2 in Cervico-Vaginal Secretions as a Predictor of Spontaneous Preterm Birth in Asymptomatic High Risk Women-A Nested Case-Control Study

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Trappin2 is an antimicrobial peptide forming a part of vaginal innate immunity and possessing a wide range of actions with minimal studied role in relation to preterm birth (PTB). **Objective:** To evaluate Trappin2 levels in cervico-vaginal secretions for prediction of spontaneous preterm birth (sPTB) and compare it with transvaginal sonography (TVS) cervical length in asymptomatic women at risk of preterm birth. **Methods:** Trappin2 levels in cervicovaginal secretions collected with dacron swab from eighty asymptomatic pregnant women at high risk for preterm delivery (history of sPTB/PPROM/late trimester abortion) was estimated by immunoassay and cervical length (in mm) was measured by TVS first at 24-28 weeks of gestation and repeated 8 weeks later. On the basis of delivery outcome subjects were divided into cases (delivery <37 weeks) and controls (delivery at 37-41 weeks) and their samples analysed. **Results:** The mean value of cervico-vaginal Trappin2 was significantly higher in women who delivered at <37 weeks of gestation (n 40), compared with term group (n 40; p<0.001) both at 14-20 weeks and 22-28 weeks. The critical cutoff value for cervico-vaginal Trappin2 at 14-20 weeks was 4620 pg/ml, above which more than 82% of subjects delivered prematurely with sensitivity, specificity, positive and negative predictive value of 82.5%, 71%, 78.5% and 81.5% respectively while TVS cervical length in this window period were not significantly associated with PTB. At 22-28 weeks Trappin2 value of 6900pg/ml had similar predictive accuracy and TVS cervical length of 28.3mm had a sensitivity, specificity, positive and negative predictive value of 65%, 78%, 74% and 68% respectively. For prediction of an early PTB ie. at <34 weeks of gestation, a value of 8804;7000pg/ml at 14-20 weeks had a significant negative predictive value of 90%. Trappin2 levels had a negative linear correlation with TVS cervical length only beyond 22 weeks of pregnancy. **Conclusions:** Raised cervicovaginal Trappin2 levels can be used as an early tool for prediction of PTB ie. as early as 14-20 weeks (earlier than TVS) in asymptomatic high risk women. It also has high negative predictive value for early PTB (<34 weeks) in the same gestational window.

[CP-2]

Complement C3 and C4 Levels in Women with Hepatitis E Virus Infection in Third Trimester of Pregnancy and its Association with Pregnancy Outcome

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Aim: To study the levels of complement factors C3 and C4 in Hepatitis E virus (HEV) infection during third trimester of pregnancy and to find out its association with pregnancy

outcome. **Methods:** The study included 37 pregnant women with HEV infection and 37 age and gestation matched healthy pregnant controls. Serum complement C3 and C4 levels were assayed by commercially available enzyme-linked immunoassay kit. **Results:** A significantly lower level of complement factor C3 and C4 were observed in pregnant women with HEV infection as compared to healthy pregnant women (C3 level 15.56±12.04ng/ml vs 25.37 ± 27.21ng/ml, p value-0.036 and C4 level 23.46± 22.09ng/dl vs 28.30 ± 20.60ng/ml, p value 0.004). Lower levels of C3 and C4 were observed in pregnant women with HEV infection having preterm delivery and low birth weight newborns as compared to healthy pregnant women (p<0.05 and p<0.05, respectively). **Conclusion:** A dysregulation of complement system is seen in HEV infection in pregnancy as shown by the low levels of complement factors C3 and C4 and is associated with preterm births and low birth weight babies. **Keywords:** acute viral hepatitis, fulminant hepatic failure, hepatitis E virus, pregnancy, complement factor.

[CP-3]

Effect of Vitamin D3 Supplementation on Symptomatic Uterine Leiomyoma in Women with Hypovitaminosis D: A pilot study

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Aims & Objectives: To evaluate the effect of vitamin D3 supplementation on leiomyoma symptoms and on uterine volume, leiomyoma volumes in women with hypovitaminosis D [25(OH)vitamin D <30 ng/ml]. **Methods:** This exploratory clinical trial focused on 30 premenopausal women with uterine leiomyoma and concomitant hypovitaminosis D. All women received vitamin D3 in doses of 60,000 IU weekly for 8 weeks followed by 60,000 IU biweekly for another 8 weeks. The changes in uterine volume and leiomyoma volumes, leiomyoma related symptoms were evaluated at 8 weeks and 16 weeks. Serum vitamin D3 levels were repeated at 16 weeks after the start of supplementation. **Results & Conclusions:** Hypovitaminosis D is common in women with leiomyoma and a significant negative correlation was observed between the baseline 25(OH) Vitamin D3 and total leiomyoma volume (r -0.434, p <0.001). The mean menstrual blood loss decreased significantly by 29.89% (p 0.003) and severity of dysmenorrhoea, pelvic pain and backache was decreased significantly by 44.12%, 35% and 50% (p <0.001, <0.019, 0.002) respectively at 16 weeks. No significant difference in uterine volume (138.83±62.76 vs 139.70±66.42, p 1.00), total fibroid volume (43.09±45.71 vs 38.08±40.28, p 0.906) and largest fibroid volume (41.57±43.91 vs 37.37±39.48, p 1.00) was found between baseline and 16 weeks post therapy. Thus 25(OH) Vitamin D3 supplementation is effective in reducing leiomyoma related symptoms and in stabilizing uterine volume, total leiomyoma volume and largest leiomyoma volume.

[CP-4]

Evaluation of Serum Biomarkers Leptin and Adiponectin as Risk Factors for Endometrial Cancer in Indian Women

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Aim & Objectives: To study the association of serum biomarkers (leptin and adiponectin) and insulin resistance with endometrial cancer. **Materials & Methods:** Forty endometrial cancer cases and age and BMI matched controls were recruited in case control study. Anthropometric measurements including BMI, waist circumference and waist/ hip ratio, fasting insulin, blood sugar and serum leptin and adiponectin levels were measured. Logistic regression analysis and Pearson's correlation coefficient was applied between measures of insulin resistance and serum leptin, adiponectin and L/A ratio in endometrial cancer cases and controls. **Results:** Baseline variables were comparable in two groups. Mean serum adiponectin level in cases was significantly lower than controls $7.89 \pm 2.80 \mu\text{g/ml}$ vs $11.23 \pm 2.84 \mu\text{g/ml}$ ($p < 0.001$). Mean serum leptin level and L/A ratio were significantly higher in cases compared with controls i.e. $28.18 \pm 13.63 \text{ ng/ml}$ vs $12.32 \pm 7.96 \text{ ng/ml}$ ($p < 0.001$) and 4.02 ± 2.29 vs 1.29 ± 1.05 ($p < 0.001$) respectively. Subjects having serum leptin level $> 10.32 \text{ ng/ml}$ odds of endometrial cancer was 19, $p < 0.001$. At serum adiponectin level $> 10.84 \mu\text{g/ml}$ odds of endometrial cancer was 7.69, $p = 0.006$. For L/A ratio odds ratio was very high and area under curve was maximum 0.912 ($p = 0.018$). Waist hip ratio, waist circumference, hypertension and fasting insulin levels were significantly high in cases compared to controls. **Conclusions:** Central obesity is a risk factor for endometrial cancer. L/A ratio is the best predictor of endometrial cancer.

[CP-5]

Effect of Yoga Therapy on 'Perceived Stress Score' in Low Risk Pregnancy: A randomized controlled trial

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Stress is being implicated as an important etiological factor for many diseases including pregnancy complications. Yoga therapy is a comprehensive system of mind body relaxation technique to relieve stress. The rationale of the study was to assess yoga as a means to reduce stress in antenatal women. **Objective:** To assess the effect of Yoga therapy on maternal stress level, heart rate variability and obstetric outcomes in low risk antenatal women. **Methods:** Low risk antenatal women were recruited at 18-20 weeks from the outpatient department of GTB hospital Delhi. A total of 90 patients were recruited out of which 78 completed the study. The study subjects were randomized into yoga group (subjects who practiced yoga for 1 hr, 3 times a week for 12 weeks) and control group who did their routine physical activity. Stress was measured by PSS scale

at recruitment, midpoint of the study and at the end of study period. Heart rate variability was measured at recruitment and at the end of the study. Pregnancy outcomes were also noted. **Results:** 38 women in yoga group and 40 women in control group completed the study. In the yoga group, PSS score decreased by 13.8% at midpoint of the study and by 17.81% at the end of the study ($p < 0.001$). In yoga group, HF (indicative of parasympathetic system) component of HRV increased by 20.06% and LF (indicative of sympathetic system) component of HRV decreased by 7.26% which was highly significant ($p < 0.001$). The LF/HF ratio also decreased by 28.38% in study group ($p = 0.001$). The incidence of hypertension, preterm delivery and FGR was lesser in the yoga group as compared to control group but the results were not significant statistically. The mode of delivery was comparable between both the groups. The gestational age at delivery, birth weight and incidence of SGA was not significant statistically. **Conclusion:** Yoga therapy appears to be a promising, non-invasive and non pharmacological intervention for reducing stress in pregnant women thus incorporating yoga therapy in antenatal care appears to be a feasible, safe and cost effective strategy.

[CP-6]

Correlation of Sperm DNA Damage and Epigenetic Modifications with Semen Parameters and Success of IUI

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Infertility is a common clinical problem. In about 50% of cases, problem lies in male partner either solely or in combination with female factor. When semen analysis is normal then genetic defects may be the true cause of infertility. **Objectives:** To correlate semen parameters with sperm DNA damage detection by Sperm Chromatin Dispersion (SCD) test and also with epigenetic modification present in sperm, to predict pregnancy rate after IUI at different cut-offs of sperm DNA damage and sperm epigenetic modifications and to determine the correlation between SCD test and epigenetic modifications. **Method:** In this prospective observational study 80 couples who underwent ovulation induction with IUI for various indications were included. Prewash and postwash samples were evaluated for sperm count and motility, DNA fragmentation analysis by SCD test and epigenetic modification assessment by detection of percentage of 5-methyl cytosine (5mC). **Result:** Overall success of IUI was 12.5%. Semen parameters showed statistically significant difference between prewash and postwash. DNA fragmentation and the percentage of 5mC in sperm DNA was significantly lower in pregnant group ($p = 0.00$). There was significant negative correlation of % of sperms with fragmented DNA with sperm motility ($r = -0.291$) and significant positive correlation between sperm count and percentage of 5mC cytosine in sperm DNA ($r = 0.254$). No correlation was found between epigenetic modification and SCD and also with semen parameters. **Conclusion:** SCD can be recommended in cases of failed IVF/ ICSI. Pre wash SCD assessment may give better insight to the likely quality of post wash semen sample.

[CP-7]

Isolation and Characterisation of Mesenchymal Stem Cells Derived from Amniotic Fluid

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Objective: To isolate mesenchymal Stem Cells (MSCs) from human amniotic fluid and study their phenotypic characteristics. **Method:** In 23 Women undergoing amniocentesis for genetic study, an additional 5 ml of amniotic fluid was taken after obtaining informed consent. Samples were centrifuged, cell pellet mixed with media and seeded. AFMSCs were isolated and expanded. The isolated amniotic fluid Mesenchymal Stem Cells (AFMSCs) were studied for their morphologic characteristics and cell surface marking using flow cytometry. **Result & Conclusion:** In 18/23 samples, primary culture cells from amniotic fluid showed mesenchymal cells with spindle-shaped morphology under phase contrast microscope. Average 5 million cells were obtained at the 3rd passage. On flow cytometry for cell surface profiling, AFMSCs showed positivity for CD29 (51%), CD90 (74%), CD73 (66%) and CD105 (58%), and these cells were negative for CD34/45. **Conclusion:** Successful isolation of AFMSCs from amniotic fluid is possible so amniotic fluid may provide an excellent source of MSCs both for basic research and for potential therapeutic applications.

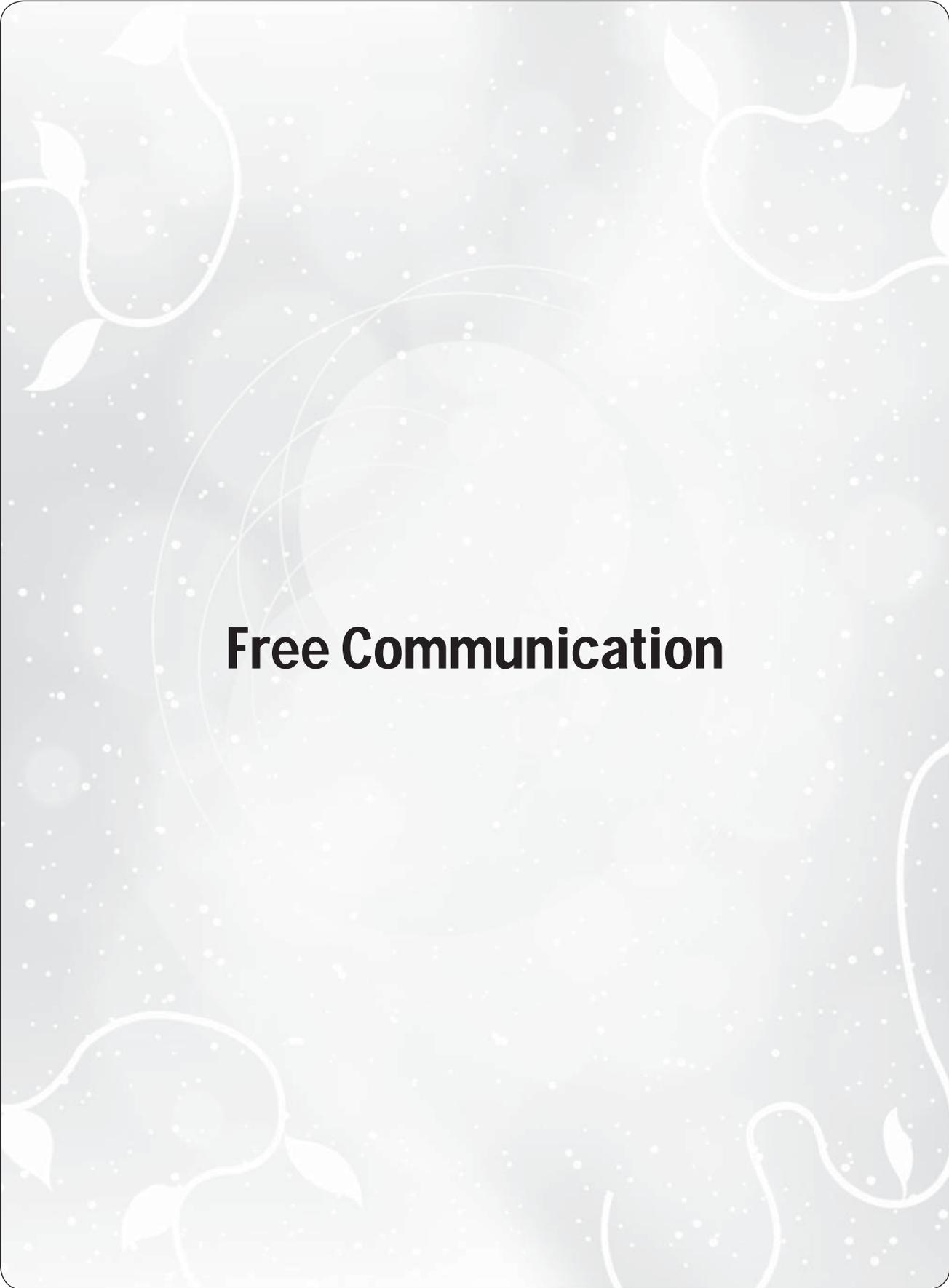
[CP-8]

Assessment of Maternal Serum Levels of Vascular Endothelial Growth Factor and Placental Growth Factor in Threatened Abortion: A case control study

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Aim and Objectives: VEGF, PIGF are implicated in the pathophysiology of threatened abortion. Our study aimed to assess the maternal serum levels of VEGF and PIGF and to determine their serum levels at various gestational age in cases and controls. **Materials and Methods:** 3 ml of peripheral blood sample was collected from each case and control. The plasma was separated and quantification of VEGF and PIGF was done by using ELISA kits in cases and in age and gestational age matched controls. Correlation of the serum levels of VEGF and PIGF was done with chorionic haemorrhage in cases of threatened abortion. **Results:** Serum levels of VEGF decreased by 52.52% in cases as compared to controls (30.65 ± 9.41 pg/ml vs 64.55 ± 16.67 pg/ml) and the p-value was <0.001 . The mean serum levels of PIGF in cases decreased by 22.90% (263.54 ± 68.108 pg/ml vs 341.83 ± 112.704 pg/ml) and the decrease was significant. Trend could not be elicited in the VEGF and PIGF levels with increasing gestational age. The increase in VEGF was statistically significant, however the decrease in PIGF values in cases as compared to controls was not statistically significant. **Conclusion:** In threatened abortion, the levels of both VEGF and PIGF fall and they can be used as markers of threatened abortion.

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Free Communication

Oral Presentation

[FC-1.1]

Role of Hysteroscopy and Histopathology in Evaluating Patients with Abnormal Uterine Bleeding

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Abnormal uterine bleeding is one of the leading causes for seeking gynaecological advice. **Objectives:** To determine the pattern of hysteroscopic abnormalities and histopathological features of Abnormal Uterine Bleeding and to correlate hysteroscopic findings with histopathological findings. **Methodology:** The present study was an observational study carried out in the Postgraduate Department of Obstetrics and Gynaecology and Postgraduate Department of Pathology of Government Medical college, Srinagar. In this study, 100 patients presenting with abnormal uterine bleeding were subjected to hysteroscopy and histopathology. The period of the study was One and a Half Years from April 2014 to September 2015. **Results:** The most common abnormality detected by hysteroscopy was Endometrial Hyperplasia (27 cases, 27%) followed by endometrial polyps (21 cases, 21%). Endometrial Hyperplasia was the most common abnormality found in Menorrhagia followed by polyps while polyps were the most common finding in polymenorrhea and endometrial hyperplasia was the most common pathology in postmenopausal bleeding. Hysteroscopy had a sensitivity of 93.2%, specificity of 83.9%, positive predictive value of 82%, Negative Predictive Value of 94% in diagnosing etiology of abnormal uterine bleeding. **Conclusion:** This study confirms that hysteroscopy has a definitive role in evaluating patients with Abnormal uterine bleeding and hysteroscopy and histopathology complement each other in the evaluation of a patient with Abnormal uterine bleeding.

[FC-1.2]

A randomised controlled trial to evaluate the relationship between size of ultrasonically detected hydrosalpinx mode of laparoscopic surgery (removal/ligation) and optimum time interval prior to embryo transfer in IVF-ICSI-ET cycles

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Objective: The aim of this study was to find out if there is a relationship between the size of hydrosalpinx detected by 2D-transvaginal ultrasound, the technique of laparoscopic surgery (if done) i.e. removal or ligation and optimum time interval prior to embryo transfer in IVF-ICSI-ET cycles. **Materials and Methods:** 83 patients who sought treatment for infertility at Indira IVF hospital, Delhi and were diagnosed with hydrosalpinx were chosen. They were randomised into three groups by a

computer software. Group-1-USG hydrosalpinx >2cm, underwent lap ligation, Group 2-USG hydrosalpinx >2cm, underwent lap salpingectomy. Based on the duration from embryo transfer, they were randomised into three groups, group 1-<10 weeks from lap surgery to ET, group 2-10-16 weeks from lap surgery to ET and group 3- >16 weeks from lap surgery to ET. These groups were compared based on primary and secondary outcomes. primary outcome was pregnancy rates. Secondary outcomes were implantation rates, clinical pregnancy rates and take home baby rates. **Results:** our study found that group 2 had significant higher pregnancy rates 72.4% v/s 43.9%; p<0.001, showing the superiority of laparoscopic salpingectomy over laparoscopic tubal ligation in terms of pregnancy rates. The clinical pregnancy rates, live birth and take home baby rates were similar in the two groups. Also, it was concluded that the maximum pregnancies occurred in the time frame group, i.e. group 2-10-16 weeks from lap surgery to ET; difference of means 395.1 to 654.9, p<0.001. **Conclusion:** our study suggests laparoscopic salpingectomy as superior choice of surgery over ligation and a minimum time interval of 10 weeks prior to embryo transfer in IVF-ICSI-ET cycles. Also, any size of ultrasonically detected hydrosalpinx should be removed surgically prior to undergoing IVF-ICSI-ET cycles.

[FC-1.3]

Verres Needle Versus Direct Trocar Entry For Laparoscopy: A retrospective study

Sushma Sinha

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Objective: The aim of this paper is to compare the outcomes of verres needle entry versus direct trocar for laparoscopy in terms of the duration of the procedure, ease of performance and the complications encountered during each technique. **Material & Methods:** The present study was conducted on a retrospective basis from April 2008 to Sep 2017, in the dept of Obs & Gynae, in a 100 bedded hospital, ABGH hospital. All the cases who underwent laparoscopic ligation procedure during this time were taken into account. From 2008 to 2012 traditional technique of verres needle entry was used for access (group -1) but it had been switched over to direct trocar since 2013 (group -2) These two groups were compared in terms of the demographic profile, duration of procedure, previous h/o surgical interventions, ease of performance and various complications encountered during the procedure. **Results:** The total number of patients who underwent ligation during this period were 1912, which were divided into two groups, till 2012 (verres needle entry group, group-1) 754 patients (39.44%), and after 2012 (direct trocar, group -2) 1158 patients (60.56%). Duration of procedure was 4.5±1.2 min in group 1 which was significantly higher than group 2, 2.2±0.8 min (p-value <0.001). Amount of gas required was greater in group 1, 4.9±1.3 lts as compared to group 2, 2.4±0.5 lts. **Conclusion:** Direct trocar entry is a reliable alternative to traditional technique for pneumoperitoneum establishment and should be regarded as a part of the surgical armamentarium of a trained laparoscopic surgeon.

[FC-1.4]

Successful Management of Caesarean Scar Pregnancy by Medical and Surgical Methods- Case Series

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Introduction: Caesarean scar pregnancies (CSPs) are on the rise parallel to increasing caesarean section rates. Management of CSP lacks consensus. There are 31 primary modalities involving medical, surgical and radiological approaches either alone or in combination. We report here our experience of treating nine CSPs in a single unit with medical management followed by suction evacuation. **Materials and Methods:** All cases of CSPs had pre treatment serum beta human chorionic gonadotropin (beta hCG). If embryonic cardiac activity was present, Potassium Chloride (KCl) 0.3 to 0.5 ml was injected intracardiac under ultrasound guidance transvaginally. This was followed by intramuscular methotrexate alternating with folic acid (methotrexate day 1,3,5,7 and folic acid day 2,4,6,8). If embryonic cardiac activity was absent, only methotrexate along with folic acid was used in the same manner. Serum beta hCG was measured on day 5,7,14 and thereafter fortnightly. At fall of 15% of previous level, methotrexate was stopped. At beta hCG level of <200 mIU/ml, suction evacuation was done. Note was made of hemorrhage requiring blood transfusion/tamponade/surgical management. Complete cure was defined as successful suction evacuation, or spontaneous resolution of mass and no complications. **Results:** Mean gestational age of entire cohort was 53.44 days (r43-70). Mean beta hCG level was 63484.2 mIU/ml. (r12275-91970 mIU/ml). Embryonic cardiac activity was present in six out of nine cases. Four doses of methotrexate were required in two patients, three doses in five and two doses in two patients. By day 14, all patients had a significant fall in beta hCG (p 0.008). by day 60th, all patients had beta hCG level of <200 mIU/ml. Regarding outcome, suction evacuation was required in 7 patients, one had spontaneous resolution. One case had significant hemorrhage at suction evacuation which was successfully managed with balloon tamponade. One case required emergency hysterectomy. Both these cases required blood transfusion. No patient experienced any adverse effects of methotrexate. Overall success rate was 77.78% (7 out of 9 cases) and the complication rate of 22.22% (2 out of 9 cases). **Conclusion:** Medical management followed by suction evacuation is a reasonable option for treating CSPs.

[FC-1.5]

Role of Chromohysteroscopy in the Evaluation of Abnormal Uterine Bleeding

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Aims and Objectives: To evaluate the role of chromohysteroscopy in AUB by comparing it with classic blind endometrial sampling. **Methods:** A cross-sectional study was conducted on 50 women in reproductive age group with AUB from November 2015 to April 2017. Women with pregnancy related bleeding, fibroids, cervical causes of bleeding, cases

with grossly identifiable pathology on clinical examination and diagnostic hysteroscopy, thyroid disorders and bleeding diathesis were excluded from the study. Hysteroscopic guided biopsies were taken from the methylene blue stained area [sample I (n 50)] and from unstained area [sample II (n 50)]. Following this, a blind endometrial aspiration sample III (n 50)] was performed in all 50 women. The diagnostic accuracy of chromohysteroscopy and guided biopsy in these cases of AUB was assessed. **Results and Conclusions:** Small lesions and subtle changes in endometrium are often missed on hysteroscopy. It is thought that chromohysteroscopy highlights these defects and makes pick up of lesion area easy. Histopathology reports of MB stained area were compared with blind endometrial aspiration. We observed that simple endometrial hyperplasia without atypia was diagnosed in 7 women (n 50) by stained area sample whereas it was diagnosed in only 5 women (n 50) by endometrial aspiration sample. Endometritis was diagnosed in 4 women (8%) by both the samples i.e., stained area biopsy and endometrial aspiration. In our study chromohysteroscopy has picked up more cases of endometrial pathology when compared to endometrial aspiration but the results were not statistically significant (p value 0.617). This may be due to smaller study sample. Chromohysteroscopy can be used as a complementary modality in diagnosis of AUB but may not replace endometrial aspiration. So we should continue doing endometrial aspiration for evaluation of abnormal uterine bleeding in reproductive age group. However we suggest that chromohysteroscopy may be performed in cases where there is a high index of suspicion of endometrial pathology like hyperplasia especially if it was not picked up by endometrial aspiration.

[FC-1.6]

Comparative Analysis of Surgical Sperm Recovery in Azoospermia Using Pesa/Tesa and ICSI Outcome

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KJIVF & Laparoscopy Center

Objectives: To compare the sperm recovery in non obstructive azoospermia (NOA) and obstructive azoospermia (OA) with PESA/TESA. To compare ICSI outcome among both the groups. **Methods:** Retrospective analysis of 100 cases of percutaneous epididymal sperm aspiration (PESA) and testicular sperm aspiration (TESA) performed at KJIVF & laparoscopy centre, delhi from 2014-2016 was done for surgical sperm recovery in azoospermic men. A diagnosis of azoospermia is confirmed by using standard evaluation as recommended by WHO. Patients with azoospermic semen analyses with small-volume testes and an elevated FSH were taken as NOA and normal volume testes with normal FSH level as OA. In all the cases scrotal mapping was done and sample taken from multiple sites through percutaneous puncture of epididymis and testes using a fine 21-gauge needle. Samples obtained are subsequently immersed in human tubal fluid medium and screened immediately under inverted microscope. All the positive samples were frozen and later used for ICSI. **Result:** In 100 cases of azoospermia 44 were NOA and 56 were OA. Sperm recovery rate was 47.7% (21/44) for NOA and 91% (51/56) among OA. Clinical pregnancy rates were comparable among both the groups after excluding the female factor. **Conclusion:** PESA/TESA offers a good sperm

recovery in azoospermia. In the era of in vitro fertilization with intracytoplasmic sperm injection, these simple surgical sperm extraction techniques can also provide biologic paternity to men with NOA. PESA/TESA can be used as initial option given its minimally invasive approach and relatively small risk for parenchymal damage and testicular tissue loss. The procedure can be done without any major complication using local anesthesia and iv sedation.

[FC-1.7]

Simplified Steps of Laparoscopic Myomectomy

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Introduction: Leiomyoma is the most common pelvic tumor in female pelvis and is mostly considered as nonmalignant tumor. Laparoscopic myomectomy is an established treatment of symptomatic fibroids. Considering the complexity of the technique it is not practiced widely among the gynaecologists as the first choice.

Materials and Methods: In a retrospective analysis of 1430 cases of laparoscopic myomectomy done between July 2009 to July 2017 we have simplified the steps of laparoscopic myomectomy. The results are analyzed in terms of duration, blood loss, conversion to laparotomy and the pregnancy outcome.

Results: After analyzing the results and surgical procedures we have devised simplified steps of laparoscopic myomectomy into 1. Localizing the myoma, 2. Vassopresin injection, 3. Incision at the ideal site, 4. Enucleation of fibroid, 5. Closure of myoma bed in layers by simplified technique, 6. Extraction of myoma

Conclusion: Laparoscopic myomectomy is a surgical procedure that can be done by most of the gynaecologists with knowledge in basic laparoscopy. Our simplified steps particularly the suturing of the myoma bed can enable most to adopt to the technique with ease.

[FC-2.1]

Association of Glutathione-S-Transferase Gene Polymorphism and Enzyme Activity with Organochlorine Pesticides in Pre-Eclampsia: A case-control study

Saloni Kamboj, Kiran Guleria, BD Banerjee, Richa Sharma
UCMS & GTB Hospital

Pre-eclampsia is a pregnancy specific disorder and a major cause of maternal and neonatal morbidity and mortality and has long term consequences as well. Role of gene-environment interaction in pathogenesis of pre-eclampsia has been less explored area. **Objectives:** To determine the frequency of GSTM1 & T1 gene polymorphism, to estimate and compare serum levels of glutathione-s-transferase enzyme, to quantify and compare organochlorine pesticides levels in maternal blood of cases and controls & to evaluate the correlation; if any; amongst GSTM1 & T1 gene polymorphism, GST activity and organochlorine pesticides levels in cases. **Materials and Methods:** 66 cases and 66 controls were recruited. Frequency of GSTT1/M1 gene polymorphism was estimated using PCR. GST enzyme activity was measured by ELISA. Estimation of

OCP residues was done by gas chromatography. **Results and Conclusions:** GSTT1/GSTM1 double null polymorphism was significantly high in cases & GSTT1-(null) genotype was exclusively associated with severe pre-eclampsia. GST null genotypes significantly downregulated GST activity, lowest with double null genotype. 946 -HCH, Heptachlor, Dieldrin, Endosulphan-I levels were found in higher amounts in cases as compared to controls & 946 -HCH, Heptachlor, Endosulphan-I & II were associated with significantly low levels of GST. Thus we conclude that there is a possible role of gene-environment interaction in the pathogenesis of pre-eclampsia. An interaction of increased levels of pesticides with GST polymorphisms (null type) causes low levels of GST enzyme levels (an anti-oxidant) resulting in increased oxidative stress causing pre-eclampsia.

[FC-2.2]

Risk Factors in Pregnancy with Heart Disease and Their Predictive Value For Adverse Feto-Maternal Outcome In India

Preeti Sharma

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Introduction: Heart disease complicates 1% to 3% of all pregnancies and is responsible for 10% to 15% of maternal mortality.¹ In India, the rheumatic heart disease (RHD) contributes to approximately 70 % of heart disease seen in pregnancy.² The maternal mortality rate in women with cardiac disease is 7% and morbidity is 30% during pregnancy in India.³ It is the leading cause of admissions in obstetrics ICU.⁴ **Material and methods:** This is a prospective observational study conducted in PGIMER & Dr. RML hospital, Delhi in department of Obstetrics and Gynaecology from November 2015 to March 2017. 35 pregnant patients with heart disease were selected in any trimester. Patients with associated chronic medical disorders, twins, malpresentations or any other complications which could adversely affect fetomaternal outcome were excluded from study. Cardiac and noncardiac risk factors were taken and correlated with adverse fetomaternal outcome which were predefined at enrollment. **Result:** Incidence of heart disease was 2.69% in our study population. RHD is still the predominant disease in India. Among non cardiac risk factors late booking and multiparity was associated with adverse fetal outcome. Among cardiac risk factors AF, Severe MS, severe PAH, NYHA IV, CARPREG score 2 were found to be significantly associated with adverse fetomaternal outcome. **Conclusion:** Sev MS, sev PAH, AF, CARPREG score and NYHA class has been validated in our study as risk factors. WHO class did not have significant correlation to predict adverse fetomaternal outcome in our study.

[FC-2.3]

Retrospection of Severe Acute Maternal Morbidity Cases At a Tertiary Care Centre in Greater Noida

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Aims and Objectives: The present study was undertaken to evaluate the incidence of SAMM, maternal deaths, and mortality index at our centre. Secondary objective was to study the causes of near miss mortality at our centre. **Methodology:** Present

study is a retrospective cohort analysis of all the near miss cases admitted in obstetric casualty and intensive care unit, SMS&R, Greater Noida. The period of study extended from January 2015 to August 2017. The cases were studied if they fulfilled the parameters of WHO near miss criteria and evaluation of demographic profile was done. Obstetric parameters and all the near miss events were recorded and studied. **Results:** Out of a total of 18,564 emergency obstetrics admissions, there were 2,508 deliveries and 148 cases of SAMM. Maximum cases had Hypertensive disorder of pregnancy, 43%, (OR 1.44), obstetrical haemorrhage for 38% cases (OR 1.31), followed by anaemia(10%) and renal dysfunction(6%). **Conclusion:** Despite exhaustive efforts at all levels, hypertensive disorders of pregnancy, anaemia, haemorrhage, sepsis have not taken a back seat. They remain the leading causes of maternal near miss and remain important contributors to maternal mortality as well. Setting SOPs of all near miss events should be encouraged at each level of health care.

[FC-2.4]

Intensive Care Admission of Obstetric Cases: An audit

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Aims: To study the demographic and clinical characteristics of critically ill women admitted in ICU and their outcome. **Methods and Materials:** This observational study was conducted in Dr BSA Medical college & Hospital, Rohini over a period of six month. Data of critically ill women admitted in labour room and transferred to ICU was collected on a predesigned performa which included demographic profile, symptomatology, diagnosis and outcome. **Results:** A total of 40 women were admitted to ICU during this period. Seventy five percent were in age group of 20-29 yrs. Most women (37.5%) were grand multi-para followed by second gravid. Twenty two women were booked during antenatal period. Most common conditions requiring transfer to ICU were pre eclampsia and eclampsia followed by jaundice in pregnancy. The mean stay in ICU was 3 days. Fifty two percent women required ventilatory support. Overall survival rate in this group was 57.5%. **Conclusion:** Preclampsia, eclampsia and its sequelae were main reason for transfer to ICU.

[FC-2.5]

Study of Maternal in Miss in Tertiary Care Centre

Chandrakanta

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Objective: To study the causes responsible for maternal near miss morbidity and mortality. To evaluate the avoidable factors in maternal near miss morbidity and maternal mortality. **Materials and Method:** A sample size of 100 pregnant woman who satisfy the WHO inclusion criteria for MNM and all maternal mortality during the study period. A detailed history obstetric examination, informed consent, demographic profile like age, parity, booking status, gestational age, h/o obstetric complications were taken, presence of organ dysfunction, ICU

admission, the hospital course, delays at the level of the patient and reasons for referral to this Hospital were taken followed till delivery and maternal outcome observed. **Results:** In a period of one year, there were 2,085 deliveries, 1578 live births, 507 still birth, Mean age of near miss was 26.30±4.70 year (41.98%) and maternal death was 25.89. WLTC- 100. MNM was 81 cases. MD was 19 cases. Maternal near miss ratio was 51.33/1000 live birth. Maternal near miss mortality ratio is 4.3:1.(MNM/MD).- Mortality Index was 19%. SMOR 63.37 /1000 LB. MMR 101.57 /100,000 LB. **Conclusion:** Haemorrhage and hypertension were the leading cause of near miss events. As near miss analysis indicates the quality of health care and a good alternative indicator of health care system. **Key word:** WLTC-women with life threatening condition. MNM-maternal near miss. MD-maternal death. SMOR-severe maternal outcome ratio. MMR-maternal mortality rate.

[FC-2.6]

Etiology and Outcome of Pregnancy with Jaundice

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Background: The incidence of Jaundice in pregnancy is 3% to 5%. The causes can be coincidental liver disease, underlying chronic disease and condition related to pregnancy. Management of pregnant women with jaundice is very challenging because accurate diagnosis sometimes is very difficult and delay in management can be life threatening. **Objectives:** The aim of the study was to evaluate the etiology of the jaundice among pregnant women, their management and outcome. **Methodology:** A clinical audit was done in Department of Obstetrics and Gynaecology at Dr. BSA Medical College and Hospital among pregnant women with jaundice who were admitted in the hospital. **Results:** 42 pregnant women were admitted in hospital over the period of 4 months. Eighteen women were diagnosed as viral hepatitis (Six had Hepatitis A and Hepatitis B each, five had Hepatitis E). Ten women suffered from Intrahepatic cholestasis of pregnancy and 2 from obstructive jaundice and ten from hypertensive disorder in pregnancy and rest of unknown etiology. 23 women (53.4%) had preterm delivery and 12 women delivered by LSCS (of these nine had preterm LSCS). Three women (7.14%) had maternal mortality. All three mortality belonged to hypertensive disorder in pregnancy and its associated complication. Perinatal mortality was 16.7%, all of them were preterm deliveries. **Conclusion:** The disease is associated with high incidence of preterm labour. Main cause of maternal mortality was found to be hypertensive disorder in pregnancy and its sequel (coagulation failure, renal failure, septicaemia, hepatic failure) and main causative factor for perinatal mortality was prematurity and related problems.

[FC-3.1]

Fear of Childbirth: Predictors and Pregnancy Outcome

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Divyansh Aggrohiya**

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Objective: To identify prevalence, demographic and psychosocial factors associated with fear of childbirth and its impact on pregnancy outcome. **Study period:** August 2016 to August 2017 **Methods:** In this Prospective (Longitudinal) observational study 183 antenatal women; 24 weeks period of gestation of any parity and irrespective of medical and obstetric risk factors were recruited. Demographic and psychosocial and obstetric details of participants were noted as per Wijma Delivery Expectancy Questionnaire (W-DEQ). **Results:** Incidence of tokophobia in the study was 35.5%. Obstetric complication in previous pregnancy, pressure to have male child, lack of social support from family members, child care stress are the important risk factors associated with tokophobia. 20% women in tokophobia group delivered by cesarean section while only 4.2% in control group. NICU admission rate in tokophobia group were significantly higher than the control group. Low self esteem, and history of prenatal depression are important risk factors associated with postpartum depression. **Conclusion:** Antenatal period provides an ideal time to screen and assess the first onset of depression along with the routine checkup. Antenatal women who are pregnant for the first time and express severe fear of delivery need to be offered professional care to be able to manage the course of pregnancy and then have a positive and safe delivery experience.

[FC-3.2]

Evaluation of Placental VEGFA MRNA Expression in Preeclampsia: A case control study

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Abstract: Background: The aim of our case control study was to determine expression of VEGFA mRNA in placenta of preeclampsia (PE) versus uncomplicated pregnancy to further clarify its differential expression in pregnancy hypertensive disorders. **Material and methods:** The PE group was subdivided into severe and non severe, those with or without HELLP syndrome and placental VEGFA characteristics were compared for these cohorts. Additionally, the neonatal and maternal outcomes were recorded. The quantification of placental VEGFA by done using quantitative real time PCR and results expressed as fold change. **Results:** Out of 42 PE cases, 23 (55%) were non severe and 19 cases (45%) severe PE. Out of 19 severe PE patients, 8 (42%) were HELLP syndrome (complete HELLP) and remaining 11 (58%) were non HELLP severe PE. Compared to controls, the true fold change in PE, HELLP, Non HELLP, severe PE, non severe PE was -2.186, -13.333, -6.698, -8.950 and 1.466 respectively. **Conclusions:** Our results showed a lowered VEGFA expression in PE placenta compared to uncomplicated controls. The finding of initial increase of VEGFA in non severe PE and subsequent marked lowering in HELLP strengthens the existing hypothesis of decompensated VEGF being a major role player in PE.

[FC-3.3]

Estimation of Maternal Serum Vitamin D Levels and Its Correlation with Gestational Diabetes Mellitus

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Objective: Several studies in the past two decades have proved beyond doubt that there is a high prevalence of hypovitaminosis D worldwide including India. The study aims to determine the prevalence of hypovitaminosis D in the pregnant population attending our institute and its correlation with gestational diabetes mellitus. **Methods:** This study was conducted at the department of Obstetrics and Gynecology, PGIMER, Dr. RML Hospital over a period of 1 year and 4 months. Four hundred term patients were enrolled randomly who fulfilled the inclusion and exclusion criteria. 3-4 ml of fasting blood samples were collected and analysed for total serum calcium levels and serum vitamin D levels. The 25(OH)D levels for each subject was recorded and correlation of vitamin D levels with gestational diabetes mellitus was analysed. Statistical analysis was done and a p value of <0.05 was considered statistically significant. **Results:** The overall prevalence of vitamin D deficiency in the present study was 86.25%. The overall mean serum vitamin D level was 14.06 +/- 9.43 ng/ml. Thirty five out of 37 GDM patients had hypovitaminosis D i.e. 94.59%. The prevalence of hypovitaminosis D among non-GDM population was 85.40%. The association between GDM and Vitamin D deficiency was statistically non significant with a p value 0.186. **Conclusion:** There is a very high prevalence of hypovitaminosis D in pregnant females attending our institute. Although 94.59 % of GDM patients had vitamin D deficiency there is no statistically significant association between gestational diabetes mellitus and vitamin D levels.

[FC-3.4]

To Study Serum Soluble Endoglin as a Marker of Fetomaternal Outcome in Preeclampsia and Eclampsia

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Objective: To find out the diagnostic and prognostic significance of serum sEng and its association with maternal and fetal outcome in PE and eclampsia. **Material and methods:** A total of 90 pregnant women of 20-40 weeks of gestation were enrolled, out of which 30 were registered as control, 30 as PE and 30 as eclampsia as per NHBPEP 2000 WORKING GROUP. Serum sEng was measured by ELISA technique using ELISA kit Uscn Life Sciences. **Results:** On ROC analysis a cut off value of S.sEng 6.26 ng/ml was found to be 100% sensitive and 100% specific in diagnosing preeclampsia when area under curve was 1. There was a statistically significantly higher levels of serum sEng in patients with severe PE (14.94±0.89 ng/ml) and eclampsia(14.96±1.96ng/ml) in comparison to mild PE(10.21±0.86ng/ml) and control(2.08±0.56ng/ml). A strong positive correlation of serum sEng was observed with systolic (r 0.928) and diastolic (r 0.916) blood pressure, serum LDH(r

0.791), serum uric acid(r 0.722). A negative correlation was observed with neonatal birth weight, APGAR score, need for resuscitation, and admission to the neonatal unit. A significantly higher levels of serum sEng was observed in patients who developed complications (p<0.001). Highest level of serum sEng was observed in case of maternal (17.84±0.22ng/ml) and fetal (16.11±1.13ng/ml) mortality. **Conclusion:** Our study revealed that value of serum sEng were increased with severity of disease and correlates positively with maternal and fetal outcome. Key Words- sEng- soluble endoglin, PE- preeclampsia.

[FC-3.5]

Emerging Role of Biomarker in Predicting Severity of Preeclampsia and Adverse Fetomaternal Outcomes in Preeclampsia

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Objectives: To correlate the Placental growth factor (PIGF) with severity of preeclampsia and fetomaternal outcomes in preeclampsia. **Methods:** 75 antenatal women diagnosed with preeclampsia as per ACOG guidelines at gestational age of 30-32 weeks were recruited. Relevant investigations including serum PIGF levels were measured using ELISA kit and correlated with adverse fetomaternal outcomes. Management included fetomaternal monitoring, administration of glucocorticoids and termination of pregnancy as per hospital protocol. **Results:** Mean PIGF levels in women with and without adverse maternal outcomes was 23.26pg Vs 61.02pg/ml (p<0.004). Median PIGF levels in women with and without adverse fetal outcomes was 25.328pg/ml vs 97.29 pg/ml outcomes (p<0.015). Women were divided into three groups depending on the maternal serum PIGF levels. In women with very low PIGF levels(12pg/ml) & low PIGF levels (12pg/ml-5 percentile) adverse maternal outcome occurred in 40 and 36% respectively as compared to 0% in women with normal PIGF levels(p 0.275). Adverse fetal outcome was present in 90 and 93% of women with very low or low PIGF as compared to 50% with normal PIGF level and this was statistically significant. 100% of women with very low and 67% with low PIGF level had severe preeclampsia as compared to 25% with normal PIGF levels and this was statistically significant. Systolic blood pressure had a significant negative correlation with PIGF levels. **Conclusion:** PIGF levels correlates well with severe preeclampsia and adverse fetomaternal outcome and may have a role to stratify the disease management.

[FC-3.6]

Amniotic Fluid Optical Density at the Onset of Labour and its Correlation with Fetal Lung Maturity

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Aim of The Study: To study the amniotic fluid optical density at onset of labour and its correlation with fetal lung maturity. **Objective of Study:** To measure the optical density of amniotic fluid at onset of labour. To assess lung maturity of the newborn. To correlate values of amniotic fluid optical density with fetal lung maturity. **Statistical Method:** Data will be entered

into Microsoft excel data sheet and analyzed using SPSS 22 version software. Categorical data will be represented in the form of Frequencies and proportions. Continuous data will be represented as mean and standard deviation. Chi-square test and t test will be the test of significance for qualitative data and quantitative data respectively. Correlation will be done to find the relationship between two quantitative variables. p value <0.05 was considered as statistically significant. **Material and Methods:** Two hundred and two pregnant women were selected for the study. Inclusion criteria o Women who underwent first trimester scan and crown rump length estimation, or o Women with regular periods who underwent scan at less than 20 weeks gestation which is in agreement with the gestational age calculated from the last menstrual period. Exclusion criteria o Blood stained and meconium stained amniotic fluid samples o Intrauterine growth restriction |o Premature rupture of membranes |o Preterm premature rupture of membranes o Amniotic fluid index <5 and >25 |Informed consent was taken from all women prior to artificial rupture of membranes and before LSCS. Under aseptic precautions amniotic fluid samples were collected while doing amniotomy after 3-4 cm dilatation by an intramuscular needle fitted with a 2 ml disposable syringe. This procedure was done under vision gently by inserting one Sim's speculum, if necessary two, taking care to avoid injury to the presenting part. Amniotic fluid samples were collected at cesarean section after careful incision on the uterus from the bulging membranes. The color and turbidity of fresh uncentrifuged amniotic fluid samples thus obtained was measured subjectively by naked eye inspection and quantified subjectively as per Table Color/Turbidity of amniotic fluid Score Watery. 1 Milky. 2 Buttermilk like. 3 Curd like 4. The color and turbidity of the fresh uncentrifuged sample was objectively quantified by colorimetry. The measurement of AFOD was done at 650 nm after the reading of control test tube with tap water. Babies are observed for the amount of Vernix on their skin immediately after birth before drying of the baby. Routine protocol for neonatal resuscitation was followed. Birth weights were recorded for all babies. APGAR scores at 1 minute and 5 minutes were obtained. Babies were observed for classical signs of respiratory distress (tachypnea >60 breaths /min, grunting, retraction of ribs, sternum. Suspected cases of distress were resuscitated with bag-mask ventilation with oxygen and referred to NICU for further management. Respiratory distress was graded using Downe's score. Analysis was done using Microsoft excel 2007. **Results:** In this observational study comprising 202 pregnant women, 134 were spontaneous deliveries. Out of these, 7 women delivered on the day of EDD which corresponds to 5.22%, while, 64.9% of the deliveries took place at gestational age between 37 and 40 weeks. 11.9% delivered spontaneously before 37 weeks and 16.42% delivered after 40weeks as per Table -| Percentages of spontaneous deliveries at different gestational ages. Gestational age (days). (In %) ?258 259-279 280 ?281. Percentage of deliveries 11. 90% 64.90% 5.20% 16.42%. Number of deliveries 16 87 7 22. The mean period of gestation in days for the total number of cases was 268.584±13.895; it ranged from 196 days to 290 days and the median was 269 days. In the non RDS group the period of gestation ranged from 236 days to 290 days with the mean being 270.288±10.680, and the median being 270 days. In the RDS group, the period of gestation ranged from 196 days to 286 days, the median being 251.167±26.502 and the median were 255 days. The mean AFOD for Non-RDS cases (n 184) 1.058±0.364

was found to be significantly higher when compared to the RDS cases (18) 0.22 ± 0.107 ; $p < 0.001$. The total number of cases with AFOD < 0.40 were 18 and all of them developed RDS. The mean birth weight in total number of cases was 2813 ± 41 , while it was 2814 ± 428 and 2388 ± 680 respectively in the non RDS and the RDS groups. The mean birth weight (grams) /gestational age (in days) ratio for total cases was 10.455 ± 1.384 . The birth weight/ gestational age for non RDS group was ranged from 6.14 to 15.679 the mean being 10.429 ± 1.664 , and the median 10.467. For the RDS group, it ranged from 9.504 to 17.073, the mean was 9.466 ± 2.478 and the median was 9.479. There was no statistically significant difference in birth weights adjusted to gestational age between the non RDS and RDS groups ($p = 0.0827$) as per Table - 3. The 202 cases were divided into groups according to gestational age, for comparison; less than 35 weeks, 3 weeks + 1 day to 36 weeks, 36 weeks + 1 day to 37 weeks, 37 weeks + 1 day to 38 weeks, 38 weeks + 1 day to 39 weeks, 39 weeks + 1 day to 40 weeks, and greater than 40 weeks. Out of the total number of cases of spontaneous onset of labor group of 133 only 1 case developed RDS which was in the least gestational age group, while in the elective termination group, RDS was present in 6 out of 7 groups, including the group with period of gestation > 280 days. But, the severity of RDS decreased with increasing gestational age (mild RDS with Downe's score < 4 , severe RDS with > 4 Downe's score).

[FC-3.7]

Analysis of the Predictive Role of Lymph Node Density, Negative Lymph Node and Odds on The Survival of Cervical Cancer Patients

Sonia Chawla, Kanika Modi

XXXXX XXXXXXX

Aim: To evaluate the impacts of the negative lymph nodes (NLNs) count on the prognostic prediction of the ratio of positive and removed lymph nodes (LND) and log odds of positive LNs (LODDs) in cervical cancer patients after radical hysterectomy and pelvic lymphadenectomy (RHPL). **Material and Methods:** 283 patients who underwent radical hysterectomy and pelvic node dissection followed by adjuvant treatment were analyzed retrospectively. The patients had International Federation of Gynecology and Obstetrics (FIGO) stage IA-IIIB. LND is the ratio of positive LNs to harvested LNs, Negative lymph node (NLN) LODDs is log odds between positive LNs and negative LNs. The 1-year, 3-year and 5-year survival rate (5-YSR) was examined according to clinicopathologic variables. Cox regression was used to identify independent prognostic factors. **Results:** The sample size was 283 patients. The median no. of lymph nodes removed being 17. The median DFS was 39 months, OS being 40 months. A statistically significant LND, analysed by cut point analysis, was found at a value over 15%. NLN was found to be significant predictor of 5-year survival at over 25. LODDs was found significant for predicting recurrence at > 0.8081 and for predicting mortality at > 0.6734 . **Conclusion:** LND $> 15\%$, NLN > 25 and LODDs are associated with an impaired disease-free and overall survival. Lymph node density may be used as an independent prognostic parameter in patients with lymph node-positive cervical cancer.

[FC-4.1]

Role of CB-NAAT in Detection of Genital Tuberculosis Amongst Women with Infertility: A prospective study

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Introduction: Genital tuberculosis (GTB) is one of the major causes leading to infertility in India. The diagnosis of GTB is difficult due to the paucibacillary nature of the disease. A study was conducted to evaluate the role of CB-NAAT in the diagnosis of GTB in female infertility and its comparison with existing diagnostic modalities. **Methods:** This study included 176 infertile women who met the inclusion and exclusion criteria. After a detailed history and clinical examination; some specific investigations were done. Endometrial tissue was allocated for AFB smear, culture, HPE examination, PCR and CB-NAAT. A Composite Gold Standard was created and case was labelled positive if either microscopy/culture or HPE tested positive or Laparoscopy suggestive of affirmative findings of GTB were present in cases tested positive with PCR and CB-NAAT. **Results:** A total of 16 cases were tested positive for GTB using Composite Gold standard. CB-NAAT was positive in 2 cases out of 176 cases. None of the patients with positive CB-NAAT showed rifampicin resistance. PCR was positive in 15 cases and was also positive in 1 case with positive CB-NAAT. On diagnostic laparoscopy performed in PCR and CB-NAAT positive cases, there were positive finding of GTB (caseous nodules, tubercles, shaggy areas) in 15 cases and 1 case was false positive on PCR. It shows that CB-NAAT has 11.1% overall sensitivity but has 100 % specificity for GTB. **Conclusions:** There is no proven gold standard method for diagnosis of GTB. Although CB-NAAT depicted lower sensitivity but it had added advantage as it takes less amount of time and also detect rifampicin resistance.

[FC-4.2]

In Vitro Fertilization Outcome of Combined Effect of Myoinositol and D- Chiro-Inositol in Poly Cystic Ovarian Syndrome Patients

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Objective: To study the combined effect of Myoinositol and D-chiro-inositol in Polycystic ovarian syndrome patients undergoing In Vitro Fertilization. **Method:** Intervention group included 30 patients who received Myoinositol (550 mg) and D-chiro-inositol (13.8 mg) orally twice a day for 12 weeks before gonadotropin stimulation. Out of 30 patients, in four patients cycle was cancelled due to risk of developing OHSS and one patient conceived spontaneously. 25 patients were included in study group and 25 historical controls were selected by using random number table. Patients underwent controlled ovarian hyperstimulation using antagonist protocol. Response was monitored by TVS and E2 levels. Oocyte retrieval was done 34-36 hours after hCG trigger which was followed by Ovum pick up and insemination. Embryo transfer was done D3/D5 after oocyte retrieval. Outcome measured were- Duration of stimulation and Total dose of gonadotropin required, E2 levels before hCG injection, Number of oocytes retrieved, Number of mature

oocytes and Fertilized oocytes, Fertilization rate, Grading of embryo, Number of embryo transferred and Number of embryo cryopreserved, Implantation rate and Clinical pregnancy rate. **Results:** Higher number of mature oocytes and fertilized oocytes were obtained and higher number of cryopreservation was done in intervention group as compared to control group, which was statistically significant ($p < 0.05$). **Conclusion:** Combination of Myoinositol and D-chiro-inositol improves IVF outcome in PCOS patients undergoing IVF because of insulin lowering activity and intracellular role in oocyte maturation.

[FC-4.3]

Strength of Association of Colposcopic Findings by IFCPC and Swede Score with Cervical Histology

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Aims and Objective: Colposcopy combined with directed biopsy is the standard diagnostic procedure and has proved highly sensitive and accurate in diagnosis of cervical lesion. Colposcopic evaluation is observer dependent, so standardization of same has been subject of concern. Our study aimed to compare the strength of association of colposcopic findings by IFCPC nomenclature and Swede Score and assess their utility in low resource settings. **Methods:** In our prospective study, 150 women aged 30 to 60 years with abnormal screening results underwent colposcopy, the findings were evaluated using both IFCPC and swede score, biopsy taken from abnormal areas. Performances by both the methods were calculated. **Results:** A total of 30 CIN lesions were detected. The sensitivity, specificity, positive predictive value and negative predictive value for detecting CIN2+ lesion by findings on IFCPC was 63.6%, 96.0%, 78.7%, 91.9%. Using swede score sensitivity, specificity, positive predictive value and negative predictive value at cut off of 8 were 42.4, 95%, 96.6% and 81.8% while at cut-off of 5, these were 96%, 88.3%, 76.7% and 93.6%. **Conclusion:** The results were comparable with Swede score simple to use with no major learning curve. In addition it has been useful in creating cut-off, with score 5 with high sensitivity can be used for screening whereas with high score 8 or more can be used to screen and treat. Thus Swede score is valuable in low resource poor settings.

[FC-4.4]

Validity of p16Ink4a for Triaging of Women Who are Screen Positive by Visual Inspection with Acetic Acid (VIA)

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Objective: To study the validity of p16Ink4a in comparison to colposcopy in women detected screen positive by visual inspection using acetic acid (VIA) for detection of pre-invasive and invasive lesions of cervix. **Methods:** Women aged 30-50 years coming to the gynaecology clinic with any complaint and who screened positive with opportunistic screening by VIA were included into the study. 50 VIA positive women (n 50) were then called for colposcopy. Prior to colposcopy, a cytology slide was taken for p16 immunostaining. **Results:** p16 immunostaining

showed linear relation with increasing grade of squamous dysplasia. p16 positivity was seen in 6% of CIN 1, 80% of CIN 2, 100% of CIN 3 and SCC. The Sensitivity, Specificity, PPV and NPV of p16 immunostaining and colposcopy for detecting for CIN 2 or more was 87.50%, 97.06%, 93.33% and 94.29% and 87.50%, 50%, 45.16% and 89.47% respectively. **Conclusion:** The Sensitivity and Specificity of p16 was significantly higher in comparison to colposcopy and therefore p16 can be a viable option for triaging VIA positive women and reducing colposcopy referrals in countries short of trained colposcopists.

[FC-4.5]

Analysis of the Predictive Role of Lymph Node Density, Negative Lymph Node and LODDS on the Survival of Cervical Cancer Patients

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Aim: To evaluate the impacts of the negative lymph nodes (NLNs) count on the prognostic prediction of the ratio of positive and removed lymph nodes (LND) and log odds of positive LNs (LODDS) in cervical cancer patients after radical hysterectomy and pelvic lymphadenectomy (RHPL).

Material and Methods: 283 patients who underwent radical hysterectomy and pelvic node dissection followed by adjuvant treatment were analyzed retrospectively. The patients had International Federation of Gynecology and Obstetrics (FIGO) stage IA-IIIB. LND is the ratio of positive LNs to harvested LNs, Negative lymph node (NLN) LODDs is log odds between positive LNs and negative LNs. The 1-year, 3-year and 5-year survival rate (5-YSR) was examined according to clinicopathologic variables. Cox regression was used to identify independent prognostic factors.

Results: The sample size was 283 patients. The median no. of lymph nodes removed being 17. The median DFS was 39 months, OS being 40 months. A statistically significant LND, analysed by cut point analysis, was found at a value over 15%. NLN was found to be significant predictor of 5-year survival at over 25. LODDS was found significant for predicting recurrence at > -0.8081 and for predicting mortality at > -0.6734 .

Conclusion: LND $> 15\%$, NLN > 25 and LODDS are associated with an impaired disease-free and overall survival. Lymph node density may be used as an independent prognostic parameter in patients with lymph node-positive cervical cancer.

[FC-4.6]

Screening for Carcinoma Cervix in the Indian Scenario: Should we move on to immuno-markers?

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Objectives: Pap smear cytology has been the mainstay for primary screening of cervical cancer in most countries including

India. Lack of experienced pathologists, need for multiple visits, low sensitivity and specificity of cervical cytology have been the major constraints in running a successful screening programme. This study aimed at comparing the efficacy of various available screening tests for carcinoma cervix on same group of population and explored the feasibility of adopting immuno markers (p16 & Ki-67) as a primary screening tool to increase the sensitivity and specificity of screening. **Methods:** 100 patients from OPD and IPD were included in the study. Screening tests (including Pap smear, liquid based cytology, HPV DNA, cytology with HPV DNA, P16, Ki-67 and dual markers) were applied to those who were positive on either conventional smear or VIA or had clinically suspicious cervix despite negative test results. Results were compared against the gold standard histopathology. **Results & Conclusion:** The respective sensitivity, specificity, positive predictive value and negative predictive value of each screening method were: Conventional Cytology 61.11%, 70%, 78.57%, 50%; Liquid Based Cytology 88.88%, 50%, 77.27%, 83.33%; Cytology+ HPV DNA Testing 94.44%, 50%, 77.27%, 83.33%; Cytology+P16 88.88%, 60%, 80%, 75%; Cytology+ Ki-67 88.88%, 100%, 100%, 83.33% and Cytology+P16+Ki67(dual marker) 88.88%, 60%, 80% and 50%. Though the use of immunomarkers as screening tools for carcinoma cervix looks promising because of less professional dependence, lesser OPD follow-ups and lesser observer bias, further studies are needed before they can be recommended for routine screening or triaging.

[FC-5.1]

Post-Operative GnRH Agonist Therapy after Laparoscopic Cystectomy in Women with Stage III-IV Endometriosis: Does it improve fertility outcome?

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Objectives: GnRH-agonists are used to improve the hostile peritoneal environment in women with severe endometriosis, however, their role in improving fertility outcome is debatable. **Materials and Methods:** Forty women were randomized after laparoscopic endometriotic cystectomy for symptomatic endometriosis Stage III-IV to receive monthly injections of GnRH-agonist depot for 3 months (n 20) or to expectant management (n 20). After 3 months, all patients received ovulation induction with Gonadotropins followed by intrauterine insemination for a total of 6 menstrual cycles or until conception occurred. All women were then followed up for 2 years for fertility outcome and disease recurrence. **Results:** During the 2-year follow up, 8(40%) women in the GnRH agonist group and 7(35%) in the expectant group conceived, however, this was not significant (p 0.71). The method of conception, i.e. whether spontaneously or on OVI+IUI was also not significant between the two groups (p 0.57). However, ovarian response to stimulation was diminished in the GnRH-a group, as evidenced by higher dose requirement of Gonadotropin (391.6 ± 105.5 IU in GnRH-a versus 325.6 ± 85.0 IU in expectant group, p 0.001). Pregnancy outcome was similar between the groups. Three women (15%) treated with GnRH-a and 5 women (25%) who received no treatment had objective disease recurrence as demonstrated by gynaecological examination and/or pelvic

ultrasonography at the end of 2 years. **Conclusions:** This study did not find any evidence that post-operative GnRH-a therapy might improve fertility outcomes in women with symptomatic Stage III-IV endometriosis after laparoscopic cystectomy.

[FC-5.2]

Efficacy of Dienogest in the Management of Ovarian Endometriomas

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Objectives: To understand the efficacy of medical treatment with Dienogest for ovarian endometriomas. **Methods:** The data of 25 patients who were treated at Artemis Health Institute, Gurgaon, with Dienogest from 2014-2016, was analysed. Presentation ranged from endometriotic ovarian cysts(unilateral or bilateral), adenomyosis, to chronic pelvic pain. **Results:** There was a significant reduction in the size of endometrioma to almost half the previous size, at the end of 3months of treatment. There was also a significant reduction in the pelvic pain. **Conclusion:** The efficacy of Dienogest in endometriosis is evident in terms of reduction in the size of endometrioma, reduction in pelvic pain, and improvement in quality of life.

[FC-5.3]

Retrospective Analysis of Gn RH Antagonist Cycles to Identify the Best Predictive Parameter of the Clinical Pregnancy

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Objective: To correlate anti-mullerian hormone (AMH), the antral follicle count (AFC), with the number of retrieved oocytes, number of Gd1 embryos and clinical pregnancy in women undergoing IVF/ICSI cycles using GnRH-antagonist protocol. **Methods:** Retrospective analysis of 49 women who underwent IVF/ICSI using antagonist cycle from May to August 2017 was done. Day 2 AFC and AMH was assessed. Variable GnRH-antagonist protocol was given. Oocytes and embryos were graded according to ESHRE Istanbul criteria. Day3 embryo transfer was done. Positive cardiac activity at 6 weeks was taken as clinical pregnancy. **Results:** 25(51%) patients had beta hcg > 50 mIU/ml and cardiac activity was seen in 21 patients (42.9%). Serum AMH and AFC was significantly correlated with the number of oocytes obtained (p 0.00, p 0.00). A positive correlation of serum AMH and AFC was seen with number of grade 1 embryos, but it was not found to be significant. AFC had a stronger correlation with number of oocytes and grade 1 embryos than AMH. Stepwise regression analysis indicated neither AFC and nor baseline AMH predicted the clinical pregnancy. Grade 1 quality of embryos predicted the clinical pregnancy (p 0.19) with an overall accuracy of 63%. **Conclusion:** The present study concludes that serum AMH and AFC are biomarkers of number of oocytes obtained after stimulation. The number of grade 1 embryo is an independent determinant for clinical pregnancy in patients undergoing IVF/ ICSI in antagonist cycles.

[FC-5.4]

Comparison of Effect of Metformin, Myoinositol and their Combination on Insulin Resistance and PCOS Morphology.

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Objectives: Primary: To analyse the effect of the 3 groups of drugs on insulin resistance. **Secondary:** To analyse the difference in the effect of the 3 drug groups on weight reduction, hirsutism and acne. **Material and Methods:** The study is a prospective randomised comparative study with period of study being six months from April to Sept 2017. We included all PCOS patients who came to us with complaints of menstrual irregularity, acne and hirsutism. We evaluated effect of the 3 drugs on this characteristics and also of weight reduction in them. Sample size was 60 and patients were divided into 3 groups of metformin (drug 1), myoinositol alone (drug 2) and both in combination (drug 3). The study was conducted at Ridge IVF Centre Malka Ganj Delhi. **Result and Conclusion:** We found a significant difference in the p value in the following |1. Drug 2 and 3 were found to be better than drug 1 in terms of insulin resistance.|2. Drug 3 was better than drug 1 and 2 in terms of weight reduction.|3. Hirsutism improve more with drug 2 and 3 than drug 1.|4. Acne improve significantly with drug 2 and 3 as compare to drug 1.

[FC-5.5]

Efficacy of Levonorgestrel Intrauterine System in Anovulatory Heavy Menstrual Bleeding

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Objectives: To study 1) menstrual blood loss 2) ET after LNG-IUS insertion in anovulatory HMB. **Methods:** 30 women with anovulatory HMB were recruited. Detailed menstrual history, examination, investigations including CBC and TVS were done. Pre (0 month) and post LNG-IUS insertion (3rd and 6th month) menstrual blood loss was assessed in terms of cycle length, days of menstrual bleeding and heaviness of flow, analysed by Pictorial Blood Assessment Chart (PBAC). ET was measured on TVS. **Results:** Menstrual blood loss decreased significantly in terms of cycle length, with women having either normal cycle (40%) or infrequent cycles (43.3%) after 6 months. Mean number of days of flow reduced to 8.23 ± 2.30 days ($p < 0.01$) at 3rd month and to 3.53 ± 2.22 at 6th month ($p < 0.001$) compared to 9.73 ± 2.56 at 0 month. Mean PBAC score fell to 165.93 ± 25.87 at 3rd month and to 59.33 ± 32.51 at 6th month ($p < 0.001$ for both) from 376.97 ± 35.45 at 0 month. ET decreased from 9.51 ± 2.26 mm at 0 month to 7.04 ± 1.7 at 3rd month and to 5.31 ± 1.63 at 6th month ($p < 0.001$ for both). **Conclusion:** There was significant reduction of menstrual blood flow & ET after LNG-IUS insertion in women with heavy menstrual bleeding.

[FC-5.6]

Impact of Vitamin D Supplementation on Semen Quality in Vitamin D Deficient Infertile Males with Oligoasthenozoospermia

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Objective: To study the levels of vitamin D levels in infertile males with oligoasthenozoospermia. To study the impact of vitamin D supplementation on semen parameters and on hormone and bone regulating parameters in vitamin D insufficient/deficient infertile males with oligoasthenozoospermia. **Method:** Male partners of infertile couple attending infertility clinic will undergo semen analysis. Based on the reports of 2 semen analysis, if subjects found to have either oligospermia or asthenozoospermia or both and asymptomatic for vitamin D deficiency were enrolled for the study. After taking written informed consent, a baseline serum level of vitamin D was measured. Reproductive hormone profile including LH, FSH, Testosterone and Estradiol and bone regulating parameters including alkaline phosphatase, serum calcium and phosphorus were also measured. Males with vitamin D level < 30 ng/ml received 60,000 IU cholecalciferol once weekly for 3 months. At the end of 3 months, repeat levels of vitamin D, semen parameters, hormone profile and bone regulating parameters were obtained. Subjects with serum vitamin D levels > 30 ng/ml were put on daily maintenance dose of vitamin D and calcium for next 3 months. Subjects with serum vitamin D levels still < 30 ng/ml received 60,000 IU cholecalciferol once weekly for next 3 months. **RESULT** of the 30 enrolled participants, 6 (20%) participants had increase in semen concentration, 9 (30%) had increase in motility and 3 (10%) had increase in both concentration and motility. Vitamin D levels increased from deficient (< 20 ng/ml) to insufficient (20-29 ng/ml) level in all the participants. 1 couple with improved semen parameters after treatment, conceived after IUI **Conclusion:** Vitamin D supplementation improves semen parameters in infertile males

[FC-6.1]

Placenta - Culprit in Unexplained Late Stillbirths

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Introduction: The mother, fetus and the placenta all, are involved in complex process of fetal death and therefore, should be addressed together. The placenta should be considered as a diary of pregnancy and after death it remains viable for several days. **Objective:** To study the gross morphological and histopathological examination findings in cases of clinically unexplained late still births and to compare the findings of the placenta and the cord of the unexplained still births with those of live born fetuses from uncomplicated pregnancies. **Methods:** We have done a case control study of all unexplained late stillbirths (> 34 weeks pregnancy) in one year from October 2015- September 2016 in Lok Nayak Hospital, Delhi to find out placental abnormalities in unexplained stillbirth in one year and categorised the histopathological results in subgroups according

to the TULIP classification. **Results:** The placenta of unexplained stillborn fetuses showed abnormal lesions on histopathology (62.9 %) when compared to controls (2.9 %). Placental bed pathology was present in 25.8 % of stillbirths and placental pathology was present in 31.4% of stillbirths. None of the cases or controls had any gross or histopathological abnormality in the umbilical cord. **Conclusion:** In large proportion, unexplained stillbirths can be explained on the basis of placental findings. Thus, placental evaluation is a tool for evaluation of unexplained stillbirths and may be the causative agent in many.

[FC-6.2]

Evaluation of Additional Sonographic Parameters in Prediction of Fetal Macrosomia at Term

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Objective: To evaluate the use of newer ultrasonographic (USG) parameters viz. Mid arm fat mass [MAFM], Mid-thigh fat mass [MTFM], Abdominal fat mass [AFM], Subscapular fat mass [SSFM], Cheek to Cheek diameter [C-C-D] and Cheek to Cheek /BPD ratio to improve the USG diagnostic accuracy of macrosomia in antenatal period. **Methodology:** A prospective observational study was conducted, including 40 cases and 80 controls with excellent dates for period of gestation (POG). Cases were defined as those women with estimated fetal weight (EFW) >3500gm and controls were EFW <3500gm. In all the women USG examination for biometry and newer parameters were performed. Patients were followed, till delivery and during this time USG was repeated 2 weekly till delivery and obstetrics and neonatal outcome were noted. Sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPP) of biometric parameters and newer USG parameters were calculated for predicting birth weight >3500gms. **Results:** According to the ROC curve best predictive value of various parameters to predict macrosomia were as follows MAFM-9.2 CM², MTFM-12.8CM², AFM 8.5MM, SSFM 7.4 MM, C-C-D 6.6 CM, CCD/BPD 0.78. C-C-D had maximum sensitivity and MTFM had maximum specificity for macrosomia. Combination of MAFM, SSFM, C-C-D increased the sensitivity of parameters to predict macrosomia. **Conclusion:** Currently studied USG parameters (EFW and abdominal circumference) have poor predictive value for macrosomia addition of newer parameters will improve the accuracy of USG to predict macrosomia.

[FC-6.3]

Association of Placental Tissue Estrogen Receptor Alpha Gene Expression with Postpartum Depression in Women at Risk: A pilot study

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Postpartum depression (PPD) is a condition occurring at 4-6 weeks after delivery. Previous studies have shown that the drop

in serum estrogen levels plays an important role in PPD but role of placental estrogen was not studied. **Objective:** To compare the proportion of placental ESR α gene expression in cases and controls. Secondary objectives were to determine the proportion of PPD and to determine the correlation of placental ESR α gene expression with various risk factors. **Methods:** To get 30 cases placental tissue of 209 women who were at risk for PPD was collected and stored. On follow up visits at 2 weeks and 6 weeks, PPD screening was done using EPDS Scale. Patients scoring > 9 were taken as cases and confirmation was done after psychiatric evaluation. Placental tissue of 30 cases and 30 matched controls was analyzed. **Results:** ESR α gene expression was found significantly down regulated by 1.33 times among PPD cases as compared to controls and the mean ESR α delta ct value in PPD cases (3.33 ± 0.697 SD) was significantly higher than controls (2.91 ± 0.759 SD) (p value 0.032). Proportion of PPD was found 16% at 6 weeks after delivery. Risk factors significant for PPD were: low SES, joint family, unwanted pregnancy, antenatal anxiety, poor decision power, low self esteem, marital dissatisfaction and no support from family. **Conclusion:** Less placental ESR α gene expression at the time of delivery is associated with further development of PPD, so it can be taken as an early predictor for PPD.

[FC-6.4]

Correlation of Doppler Assessment of Fetal Blood Flow in Various Blood Vessels, with Fetal Anaemia, in Women with Rh Isoimmunized Pregnancies

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Objective: The purpose of study was to find correlation between doppler velocimetry measurements in middle cerebral artery, umbilical artery, descending aorta and renal artery with fetal anaemia in Rh isoimmunised pregnancies after 2 IUTs and to find whether doppler values can be used as a guide to therapy after 2IUTs. **Methods:** This observational study was conducted at AIIMS in the Dept of Obs and Gyn from Nov 2014 to Oct 2016. 30 Rh isoimmunized women with h/o prior 2IUTs were enrolled. Patients were planned for 3rd IUT when MCA PSV was >1.50 MoM or expected hct <30%. Cordocentesis was done before 3rd IUT; hct measured and correlated with doppler values. **Result and conclusion:** MCA PSV MoM and fetal hct MoM had a correlation coefficient (r) -0.43 with pvalue of 0.01 (CI -0.68 to 0.08) which was significant. At a cut off of >1.50 MoM sen was 68% and specificity 57%; PPV was 83% and NPV 33%. At a cut off of >1.44 MoM sen increased to 83% and specificity to 43%. Descending aorta PSV delta and fetal hct delta had a correlation coefficient -0.54 with p value of 0.001 (CI -0.75 to -0.23) which was significant. An AUC 0.80 with pvalue 0.01 had 87% sen and 57% specificity for diagnosis of anaemia. Umbilical artery PI and renal artery PSV had no correlation with fetal hct. MCA PSV MoM and descending aorta PSV delta had a significant correlation with change in fetal hct. MCA PSV measurement can be used as a guide to therapy after prior 2IUTs but with dec sensitivity. Descending aorta doppler can be a useful adjunct

[FC-6.5]

Prediction of Adverse Pregnancy Outcomes by using Combination of Maternal Characteristics, Mean Arterial Pressure and Uterine Artery Doppler at 11+0-13+6 weeks of Pregnancy in Indian Population

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Objective: To develop a risk prediction model using maternal characteristics, mean arterial pressure and uterine artery Doppler at 11+0-13+6 weeks period of gestation for an early prediction of pre-eclampsia and small for gestational age babies in Indian population. **Methods:** A prospective cohort study done for predicting adverse pregnancy outcomes in first trimester. A preformed questionnaire was filled including baseline characteristics, mean arterial pressure (MAP), uterine artery Doppler parameters- Pulsatility index (PI), resistance index (RI) and early diastolic notch. The data was analyzed using SPSS version 17 statistical analysis software. **Results:** Out of 168 women enrolled in study complete results were obtained for 151 cases, of these 22 women developed pre-eclampsia, 10 developed gestational hypertension and 46 women had SGA babies. For prediction of pre-eclampsia, the AROC of individual parameter was calculated- Maternal characteristics- 0.519, MAP- 0.634, PI- 0.650, RI- 0.633 and diastolic notch- 0.651 which improved to 0.690 when all factors combined together. Similarly, for prediction of SGA, AROC for each parameter was calculated- Maternal characteristics- 0.500, MAP- 0.496, PI- 0.613, RI- 0.557, Diastolic notch- 0.496 and AROC obtained on combining study parameters was raised to 0.670. **Conclusion:**

Maternal characteristics, mean arterial pressure and uterine arterial Doppler indices when used in combination has better predictive value (AROC-0.690 for pre-eclampsia and 0.670 for SGA babies) in determination of adverse pregnancy outcomes than any individual characteristic.

[FC-6.6]

Rh Isoimmunisation: The challenge continues

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Objectives: To evaluate the trends in management of Rh isoimmunized pregnancies over the last 16 years in a tertiary care centre in North India. **Methods:** A retrospective review of 1023 IUTs given to 389 women over 16 years was conducted. **Results:** On an average about a 100 IUTs are being done every year. There is better awareness among physicians and the cases referred with hydrops has reduced by 50%. However still around 20% of patients come with hydrops because of poor antenatal and postnatal management of Rh negative mothers. On an average an immunized fetus needs 2-3 IUTs, however even upto 7 IUTs may be needed in special cases. The POG at first IUT is mostly around 26-28 wks however there is a significant increase in cases receiving first IUT at around 20 wks. With better techniques of monitoring and managing Rh Isoimmunised pregnancies, the fetuses can usually be carried beyond 34 weeks with a significant number of them going beyond 36 weeks too. Around 40% fetuses can be delivered vaginally. The procedure related pregnancy losses are now around 4-5%. The overall survival of fetuses is more than 90% with survival even in hydropic fetuses increasing over the years from 70% to 93%. **Conclusion:** With appropriate management, fetuses with Rh alloimmunisation can have a good perinatal outcome..

Poster Presentation

[P1.1]

Predictors of Awareness and Practice of Screening for Cervical Cancer among Urban Women in North Delhi

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Background: Carcinoma cervix is the second most common cancer of women in reproductive age group. Early diagnosis is quite beneficial as it has a long precancerous state. Awareness about its natural course, prevention, early screening and timely intervention can help in reducing mortality and morbidity due to this deadly disease. **Aim:** The aim is to study predictors for awareness and practice of screening for cervical cancer among women residing in north Delhi. **Methods and Materials:** A cross sectional prospective study was carried out in randomly selected 401 women attending Baba Sahib Ambedkar Medical College and Hospital from the month of July 2017 to Sept 2017. Structured questionnaire was used to collect the data after obtaining verbal informed consent from the women. Analysis was done using MS EXCEL spreadsheet. A p value of <0.05 was considered statistically significant. **Results:** Majority (45%) of the women were in the age group of 18-25. 33.92% of women were illiterate and 39.40% were less than 10th pass. Nearly half (54%) of them belonged to middle class and 85.25% were not working. 99.25% of study population constituted of married women and 99.5% of women in study population were sexually active. Only 31.92% of women had heard about cervical cancer and 20% had heard about screening. 2.24% women had undergone screening and 76.79 percent were willing to undergo screening following information. Only 1.5% had heard about HPV vaccine. The barrier for not undergoing screening was lack of knowledge. Age, education, marital status and working status were positive determinants as far as awareness about pap smear is concerned. Age and working status were also significant factors determining the practice of getting a pap smear done. **Conclusion:** There is still a need to educate and motivate women about cervical cancer and its prevention and health professional have a great responsibility in achieving this.

[P1.2]

Correlation of VIA Positive Cases with Colposcopy and Subsequent Histopathology in Asymptomatic Women

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Objective: To screen asymptomatic women with VIA and its correlation with colposcopy and directed cervical biopsy. **Methods:** The study was conducted in the department of Obstetrics and Gynaecology, VMMC & SJH. The study group comprised of 270 women who were VIA positive on routine screening. The VIA positive women were then subjected to

colposcopy. On colposcopy, women with Reid's score of 3 or more were subjected to colposcopic guided biopsy. The histopathology report was correlated with the colposcopy findings and colposcopy findings were correlated with VIA findings. **Results:** The mean age was 35+/- 10 years and the mean parity was 2.5. 3000 women were screened with VIA and 270 women (9%) were found to be VIA positive. The VIA positive women were subjected to colposcopy. 120 women (4%) had positive findings on colposcopy. These women were subjected to colposcopic directed biopsy. High grade lesion was found in 46 patients (1.5%) and low grade in 74 patients (2.5%). On histopathology 29 patients with high grade lesion, and 39 patients with low grade lesion on colposcopy were found to have pre cancerous lesion. 2 patients with high grade lesion were diagnosed with CIS. **Conclusion:** VIA is a very useful screening tool and should be used as an extension of gynaecological examination to pick up cases of CIN.

[P1.3]

Epidemiology of Cervical Cancer: Our experience

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Every year in India, 122,844 women are diagnosed with cervical cancer and 67,477 die from the disease. India also has the highest age standardized incidence of cervical cancer in South Asia. Therefore, it is important to understand the epidemiology of cervical cancer in our conditions. Multifactorial causation and potential for prevention makes cervical cancer an important disease for studies. This study attempts to review the available knowledge regarding the epidemiology and pattern of cervical cancer. Over a period of two and a half years 162 patients were studied. The maximum patients of cervical cancer in our study belonged to 40-59 years (58%). In the study group most patients had high parity e.g. 36.4% were Para 4 and 28.4% were Para 5. The patients presented in the late stages to the hospital. About 42.5% of women reported in the stage III B of disease, whereas 5.4% had stage IV disease. Only 1.69% of the patients had adenocarcinoma of the cervix whereas 98.3% had squamous cell carcinoma. A multipronged approach is necessary to treat this condition as identified by the health care providers. There is need for life style changes and role of opportunistic screening. Sensitizing the people of the area, is necessary to increase uptake levels of the screening strategies. Vaccination against types HPV 16 and 18 can also be undertaken after proper counselling. There is role of primary prevention as well as screening so that an early diagnosis of the disease can be done and appropriate treatment can be done.

[P1.4]

Borderline Ovarian Tumor in Unmarried Girl : A rare entity

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23 years unmarried girl presented to the Gynae OPD with C/O pain in right iliac fossa and weight loss since two months. On per abdomen examination- A 15x10 cm abdomino-pelvic mass, cystic in consistency with restricted mobility non-tender with smooth surface and slightly irregular margins, was felt. On P/R- two separate masses one approx 10x8 cm felt in the left adnexal region, another mass 5x5 cm approx felt in the right adnexa restricted mobility, non-tender cystic in consistency felt. Uterus was normal size. Rectal mucosa free. On investigation Tumour markers- CA 125- 130 U/ml was raised. On MRI Abdomen and Pelvis-Bilateral adnexa showed large encapsulated multiloculated solid, cystic masses closely abutting each other. Solid components were seen as papillary projections along the septae and walls of locules. Contents were hypointense on T2WI and isointense on T1WI. Scanty, compressed ovarian parenchyma was seen along periphery of both masses Fertility sparing surgery that is bilateral ovarian cystectomy with preservation of normal ovarian tissue was done. Histopathology of Right side ovarian cyst revealed mucinous borderline tumor. Left side ovarian cyst report was benign mucinous cystadenoma. Omental biopsy showed noninvasive implants. After 6 weeks of follow up CA125 was 50U/ml and after 12 weeks CA 125: 22 U/ml. Follow up Ultrasound & MRI Abdomen and Pelvis done at 12 weeks were normal. Recurrence is high during first 2 post op years, so cases of BOT should be followed up till 2 years. Rate of recurrence of BOT is 7% after fertility sparing surgery group. Most common site of recurrence is remaining Ovary. Recurrence after BOT is mostly BOT only. Spontaneous pregnancy rate of 32-65% has been reported in BOT treated with fertility sparing surgery with a mean duration 15 months.

[P1.5]

Power Doppler Assessment of Uterine and Ovarian Blood Flows in Polycystic Ovary cases and Non Polycystic Ovary Controls and Correlation with Pregnancy Outcome in Controlled Ovarian Stimulation Cycles

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The Colour Doppler method has enabled non-invasive evaluation of pelvic blood flow, which is useful in different pathological conditions. Ultrasound with color Doppler has role in assessing uterine and ovarian blood flows in PCO pattern and non PCO pattern. **Material and Methods:** Longitudinal Prospective Observational study of 50 PCO cases and 50 non PCO control undergoing COS cycles with IUI/ natural contact done at Infertility centre of a tertiary care hospital. The asymptomatic PCO group included women who had PCO appearance but without any symptoms of the polycystic ovary syndrome. All women underwent COS. Baseline color Doppler ultrasound

was performed On D2 menstrual cycle. Doppler Ultrasound was performed on the day of hCG injection, DF 20-22 mm with Clomiphene & 18 mm with gonadotrophins. The endometrial pattern & thickness was studied. Endometrial blood flow- Group A-no endometrial blood flow. Group B-subendometrial blood flow present. Group C -endometrial and subendometrial blood flow present. Perifollicular blood flows: F1 <25% circumferential flow, F2 -26%-50% circumferential flow, F3- 50%- 75% circumferential flow, F4 >75% circumferential flow||Blood flow of the uterine arteries (S/D PI RI) was studied. The findings were correlated with pregnancy outcomes||Inclusion criteria. All cases planned for controlled ovarian stimulation cycles. Age 20-38 yrs. Primary or secondary infertility with PCO pattern on ultrasound Exclusion Criteria Intrauterine pathology (submucosal fibroid, endometrial polyp, adhesions, Asherman's syndrome, bicornuate uterus, septate uterus)||Women with acute vaginal and cervical infection|Endometriosis and hydrosalpinx. **Primary Outcome:** Clinical pregnancy rate. **Secondary Outcome:** Endometrial thickness and blood flows. **Results:** The PI of uterine arteries of day two of menstrual cycle was significantly higher (p value- <0.001) in patients with PCO than in control women. The PI of uterine arteries on day of trigger was statistically insignificant (p- value-0.981) as almost similar in both the groups. In the present study, PCO cases had only subendometrial flows on the day of trigger as compared to Non PCO controls who had flows in both endometrial and subendometrial zones. The endometrial thickness in PCO and Non PCO group was found to be similar on the day of trigger. (p value-0.185). Intrauterine pregnancy with live fetus was much higher in patients with both endometrial and sub-endometrial blood flows as seen in Non PCO cases. **Conclusion:** Follicular blood flow necessary for conception and implantation to occur, and may help in maintenance of pregnancy. Endometrium pattern, endometrium thickness and the endometrial blood flows are good measures of endometrial receptivity. Uterine blood flow play an important role in uterine receptivity and increased value of PI of uterine artery have been related to decreased chance to conceive in ART cycle.

[P1.6]

Comparison of Bone Mineral Density Between Normal Weight and Overweight/Obese PCOS Women and Correlation With Insulin Resistance

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Objectives: To analyze the effect of Body Mass Index (BMI) on bone mineral density in women with PCOS and to find the association with insulin resistance. **Methods:** Sixty nine consecutive women diagnosed with PCOS were included in the study. They were divided into two groups on the basis of BMI using 23kg/m² as cut-off. Group 1 (normal BMI) included 19 women (27.5%) and Group 2 (overweight/obese BMI) included 50 women (72.4%). Bone Mineral Density (BMD) of lumbar spine was calculated using dual -X- ray absorptiometry (DEXA) scan. Insulin resistance was calculated as HOMA-IR using formula - Fasting Glucose (mg/dL) *Fasting Insulin (IU/L)/ 405. Statistical analysis was done using independent T- test and

Pearson correlation coefficient. P- value <0.05 was considered significant. **Results and Conclusions:** The mean age and BMI in Group 1 was 22.84 ± 2.43 years and 20.16 ± 1.90 while in group 2 was 24.62 ± 5.01 years and 28.65 ± 3.88 respectively. Postprandial insulin levels and HOMA- IR were significantly higher in overweight/obese PCOS women compared to normal BMI PCOS women (89.77 vs 54.15 IU/L; p 0.043 and 4.10 vs 1.84; p 0.001). BMD- was significantly higher in group 2 compared to group 1. (1.01 vs 0.30; p 0.001). A positive correlation was seen between insulin resistance and BMD in PCOS women (r 0.10). Present study concluded that insulin may be an influencing factor for bone growth in obese PCOS women. Also, the normal BMI PCOS females require screening for BMD and are potential candidates for treatment.

[P1.7]

Comparison of Waist Hip Ratio and BMI as Predictors of Clinicometabolic Derangements in Women with PCOS

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Objectives: To compare the correlation of waist hip ratio and BMI to clinicometabolic parameters in women with polycystic ovarian syndrome. **Methodology:** A prospective study was conducted among 200 reproductive age women with PCOD, attending gynaecology clinic. Reviewed data included weight, height, waist circumference, hip circumference, menstrual symptoms including amenorrhea, infrequent menstrual cycles & scanty flow, hirsutism, discharge from breast, blood pressure records, blood sugars (fasting & post-prandial), lipid profile and thyroid function test. **Results:** Post-prandial hyperglycemia gain is positively and significantly correlated with both BMI and W/H Ratio. Overall weight gain is positively and significantly correlated with both BMI and W/H Ratio. Fasting hyperglycemia is correlated with W/H ratio only. Clinical feature of insulin resistance i.e. acanthosis nigricans is positively and significantly correlated with W/H Ratio only. Hyperlipidemia is positively and significantly correlated with W/H Ratio only. **Conclusion:** Features of hyperandrogenism in PCOD patients had no correlation with either W:H Ratio or BMI. Weight gain, Features of insulin resistance, hyperlipidemia and fasting hyperglycemia in PCOD patients has a better correlation with Waist-Hip Ratio as compared to BMI. It seems necessary, therefore, to focus upon reducing the fat from waist area, rather than only reducing overall weight, in women with PCOD, to prevent development of long-term metabolic complications like Diabetes.

[P1.8]

Role of AMH as Diagnostic Tool for Polycystic Ovarian Syndrome

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Objectives: To evaluate role of AMH as a diagnostic tool for PCOS. **Methods:** This prospective case-control study was conducted on 90 patients attending Gynaecology OPD of Dr RML Hospital, from 1st November 2015 to 31st March, 2017. History, examination, blood investigation for hormonal profile, AMH

level and pelvic USG was done. Study groups were divided into 45 women with PCOS, diagnosed using Rotterdam criteria and 45 women as controls. Serum AMH levels in both groups were studied using statistical analysis. **Results:** Mean AMH levels of 6.08 ng/ml in PCOS was twice that of 2.98 ng/ml in controls (p<0.0001). Maximum diagnostic potential of AMH for PCOS was at a cut off of 3.44 ng/ml with sensitivity of 77.78% and specificity of 68.89%. When AMH was used as an adjunct to existing Rotterdam criteria (OA+HA+PCOM+AMH), in the present study, taking three out of four parameters yielded sensitivity of 80% with 100% specificity. USG features in Rotterdam Criteria when replaced by AMH, OA+HA+AMH (any two out of three), resulted in increased sensitivity of 86.67% and specificity of 100%. **Conclusion:** AMH levels were significantly higher in PCOS than in controls. AMH as an independent marker could not effectively diagnose PCOS. However, AMH levels as an adjunct to existing parameters for diagnosis of PCOS had good diagnostic potential.

[P1.9]

Comparative Evaluation of Menstrual Patterns and Hormonal Profiles in Normal and Abnormal Perimenopause

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Objective: To determine a significant difference if any in the hormonal levels of S.FSH, S.LH, S. Estradiol in normal perimenopause and in perimenopausal women having abnormal uterine bleeding. This study was conducted to study and compare the patterns of LH, FSH and Estradiol in normal and abnormal perimenopause using the Stages of Reproductive Ageing Workshop (STRAW) criteria (15). **Methodology:** A comparative evaluation was done after enrolling 200 patients out of which 100 women were in normal perimenopause further divided in early-25 and late perimenopause-75 (depending upon menstrual characteristics as defined by STRAW criteria) and 100 women had abnormal uterine bleeding. Sociodemographic data, presence of menopausal symptoms, menstrual and obstetric history were recorded. One time blood sampling was done to determine S. LH, S.FSH and S. estradiol by adapted solid phase direct sandwich ELISA. A transvaginal ultrasound was done for all patients to determine endometrial thickness and the presence of ovarian cysts. Endometrial sampling was done in patients with ET>8. **Results:** FSH was in menopausal ranges (>20 IU/L) in early and late perimenopause. LH and FSH in women with AUB ranged from pre to post menopausal ranges. There was significant difference in LH and FSH between normal perimenopause and abnormal uterine bleeding. LH between early perimenopause and AUB p value 0.008 LH between late perimenopause and AUB p value 0.0001. For FSH p value between early perimenopause and AUB was 0.017 and that between late perimenopause and AUB was 0.0003. Estradiol levels showed a significant difference between late perimenopause and AUB p 0.015. There was a significant difference between ETs measured in normal perimenopause and abnormal uterine bleeding. The most common symptom seen in perimenopausal woman was vasomotor changes (53%). **Conclusion:** This study shows that there is a progressive incremental trend in FSH and LH and decremental trend in Estradiol from early to late perimenopause

due to decrease in ovarian follicular reserve, although the difference is not significant. Clinical symptoms present in 50% of late perimenopausal women showed that besides menstrual characteristics we can correlate these menopausal symptoms with raised FSH and low Estradiol. These women's can be picked up and preventive therapy may be provided. In women with AUB hormonal levels would be more useful than menstrual pattern to label them as perimenopausal.

[P1.10]

Colour Doppler Enhances the Accuracy of Transvaginal Ultrasound for Diagnosing Adenomyosis

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Aims and Objectives: Role of colour Doppler in improving the accuracy of transvaginal ultrasound (TVS) for diagnosing adenomyosis. **Method:** In this prospective observational study, 30 women with complaints of AUB and/or dysmenorrhea, with the clinical diagnosis of adenomyosis or leiomyoma and planned for hysterectomy were included. These women then underwent TVS and doppler. TVS in adenomyosis reveals: 1) Loss of distinction of the endometrial- myometrial junction; 2) Heterogenous myometrial echotexture; 3) Myometrial cysts; 4) Asymmetry of the anterior and posterior myometrium; 5) Subendometrial myometrial striations. The quick addition of Doppler while conducting TVS shows vessels in central location in adenomyosis. The patients were taken up for hysterectomy and the uterus was sent for histopathological examination. Histopathology was taken as gold standard for diagnosis. **Result:** On histopathology 11 women were found to have adenomyosis, 14 had leiomyoma and 5 had both adenomyosis and leiomyoma. TVS alone was able to detect 12 of the 16 women with adenomyosis whereas TVS with doppler was able to detect all 16 patients. TVS alone had a sensitivity of 75% and specificity of 100%. Whereas when doppler is added to this the sensitivity is increased to 100% and specificity is 92.8%. The NPV is also raised from 77.8% to 100%. The accuracy increased from 86.7% to 96.7%. **Conclusion:** The addition of colour doppler to examine the vascular pattern while conducting TVS, can improve the accuracy of diagnosis and also help prognosticate and manage the patients with adenomyosis.

[P1.11]

Metabolic Syndrome and Insulin Resistance In Pcos Phenotypes

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Objective: Polycystic ovary syndrome(PCOS) is an endocrine metabolic disorder which is rapidly gaining epidemic proportions. Hyperinsulinemia and insulin resistance (IR) are thought to be key pathological factors. This study was undertaken to characterize the phenotypes of PCOS and to determine the prevalence of metabolic syndrome (MetS) and insulin resistance in them. **Methods:** This observational cross-sectional study was undertaken to assess the distribution of

the Rotterdam PCOS phenotypes and to report the prevalence and risk factors for MetS syndrome and insulin resistance using homeostasis model assesment for insulin resistance (HOMA-IR). 90 women aged 18-35 years newly diagnosed with PCOS were classified into one of the four potential PCOS phenotypes based on history, examination and investigations. **Results:** Phenotype A was the most prevalent phenotype (45.5%). Prevalence of insulin resistance in our study was 31% using HOMA- IR cutoff of 2.5, with highest prevalence in phenotype A and least in phenotype D. The overall prevalence of MetS was 36% with a two- to six-fold higher prevalence in hyperandrogenic phenotypes compared to the non-hyperandrogenic phenotype. Univariate logistic regression for predictive association of MetS parameters was significantly high for deranged parameters i.e. WC; 80cm, fasting plasma glucose & 100mg/dl, HDL & 50mg/dl and WHR & 0.85. Strong positive association was found with all these parameters ($p < 0.001$) Hirsutism (modified Ferriman Gallwey score & 8) was strongly associated with MetS ($p 0.005$). **Conclusions:** An appropriate diagnosis of PCOS and accurate identification of phenotype is important as it has long-term health implications for women. We recommend screening all hyperandrogenic PCOS women for IR and metabolic abnormalities. This study has shown that HOMA-IR is a valuable tool in identifying PCOS women with metabolic syndrome and also serve to identify PCOS subtype at high risk of future metabolic syndrome.

[P1.12]

The "Groove" Sign in Hypovitaminosis D

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Background: There is increasing awareness regarding the high prevalence, morbidity and effect on quality of life due to Vitamin D deficiency. Globally, including India, vitamin D supplementation programmes and IEC activities have also been accordingly stepped up. Due to vague symptoms, diagnosis of hypovitaminosis D is difficult. Specific clinical signs which could be picked up in everyday practice are sure to help in quicker diagnosis and treatment since universal screening through biochemical or radiological testing may not be cost effective or feasible. **Case Series:** We present the clinical & investigation details of three patients who had presented in a span of two years primarily for gynecological complaints but were diagnosed to have severe Vitamin D deficiency. The clinical suspicion was aroused due to an interesting clinical sign recognized and now named by the authors. **Discussion:** Details of the clinical sign & literature review would be discussed.

[P1.13]

Clinical Audit on Laparoscopic Hysterectomies in a Single Institute Performed by a Single Surgeon during the Duration of Four Years

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Objective: This audit was done on 72 patients who booked themselves for laparoscopic hysterectomy and had the surgery

performed during the duration of almost four years (November 2013 to September 2017) at Pushpawati Singhania Research Hospital, New Delhi, India. With regard to NICE (National Institute for Clinical Excellence) guidelines 2007(1) our aim is: 1. All surgeons should have advanced laparoscopic skills-target 100%. 2. Conversion to laparotomy should be <7%. 3. Urinary tract injuries should be less than 1%. 4. Duration of postoperative stay should be less than 2 days. **Methods:** Laparoscopic methods used were total laparoscopic hysterectomy and laparoscopically assisted vaginal hysterectomy. Retrospective data regarding the procedure, complications and postoperative hospital stay was analysed. **Results and Conclusion:** In our study there was 1.9% urological injury, 5.5% conversion rate to laparotomy, postoperative hospital stay was <2 days with no bowel complication or readmission rate. Total laparoscopic hysterectomy when performed by a trained and experienced surgeon in a good hospital setup offers minimal complications rate and shorter postoperative hospital stay.

[P2.1]

Evaluation of Bile Acid and Liver Function Tests in the Diagnosis of Intrahepatic Cholestasis of Pregnancy and its Fetomaternal Outcome

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Objectives: To estimate bile acid and liver function test levels in pregnant females presenting with Pruritis Gravidarum without skin rash, and to see the fetomaternal outcome. **Methods:** This prospective observational study included 50 patients attending antenatal clinic of the Department of Obs and Gynae of Dr. RML Hospital, from 1st November 2015 to 31st March 2017, using inclusion and exclusion criteria. History, examination, blood investigations, with ultrasound upper abdomen was done for all the patients. Diagnosed patients were treated accordingly and fetomaternal outcomes were studied. Serum total bile acid levels and liver function tests were followed up 2 weeks postpartum. Comparisons were analyzed using Chi-Square, Student's t-tests. **Results:** Serum bile acid values were positively correlated with liver transaminases values ($p < 0.05$). With the timely use of Ursodeoxycholic acid, 89.66% of primi patients and 90.48% of multi patients had normal neonatal outcome, with 82% of the birth weight >2600 gm, and only 18% of the birth weight falling into low birth weight criteria. 94% of the total neonates had >7 APGAR at 1 min, and 100% of the neonates had >7 APGAR at 5 min. Finally, the median level of both the parameters were compared pre and post delivery (after 14 days) and were found to be statistically significant. **Conclusion:** Patients with Intrahepatic cholestasis of pregnancy should be taken with utmost care. Although the estimation of serum bile acid is costly and done only in few centres, but for good fetomaternal and neonatal outcome, it should be advised and early intervention should be done.

[P2.2]

To Study the Association Between Maternal Plasma Ascorbic Acid and IL-6 Concentration in Women With PPROM and without PPRM and to Study the Perinatal Outcome

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Method: This was a case control observational descriptive study conducted in the Department of Obstetrics and Gynaecology, Safdarjung Hospital for a period of 18 months from September 2015 to March 2017. In which 100 subjects were taken, 50 cases of PPRM and 50 controls. Laboratory investigations plasma ascorbic acid and serum IL-6 were carried out and samples were taken before starting IV antibiotics. Mean outcome measures were levels of ascorbic acid and IL-6 levels in patients of PPRM and without PPRM and perinatal outcome were measured. **Results:** The mean levels of plasma ascorbic acid in patients with PPRM were 0.597 mg/dl which were low and mean levels of IL-6 in patients with PPRM were 18.18 pg/ml which were high and cut off value for neonates with increased morbidity were <0.6 mg/dl for plasma ascorbic acid and > 15 pg/ml for IL-6. **Conclusion:** Maternal serum IL-6 and plasma ascorbic acid related directly with PPRM. As high levels of IL-6 and low levels of ascorbic acid contribute to PPRM and is statistically significant.

[P2.3]

Maternal Serum Leptin and HbA1c Levels as a Predictor of Gestational Diabetes Mellitus

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Pregnancy is a diabetogenic state and insulin resistance keeps on increasing with advancing gestational age and with changes in body weight and glucose homeostasis. **Objectives:** To study the maternal serum leptin and HbA1c levels for prediction of gestational diabetes mellitus (GDM). **Method:** 365 antenatal women up to 14 weeks gestation were recruited from the out-patient department. 345 subjects completed the study, 5 ml of venous blood was taken for estimation of HbA1c and determination of serum leptin by ELISA. 75g OGTT was done at 24-28 weeks of gestation. 40 GDM cases were diagnosed and 40 matched controls were selected and pregnancy outcomes were noted. **Results and Conclusion:** The mean serum leptin levels were significantly higher in GDM patients (33.5 ± 23.9) ng/ml as compared to non-GDM patients (17.15 ± 13.6) ng/ml ($p < 0.000$). Mean HbA1c level was significantly higher in GDM group (5.1 ± 0.48) % as compared to non-GDM group (4.5 ± 0.30) % ($p < 0.000$). GDM patients had a higher incidence of adverse pregnancy outcomes and significant association was found between serum leptin and adverse outcomes. On taking cutoff for HbA1c 4.7 % we found sensitivity 77.5 % and specificity 75%.

[P2.4]

Serum Homocysteine Levels in Women with Unexplained Stillbirths

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Objective: Despite improvements in antenatal and intrapartum care, stillbirth remains an important problem in obstetrics. Maternal hyperhomocysteinemia is known to be associated with adverse outcomes of pregnancy. Our objective was to study the association of maternal serum homocysteine level with unexplained still births. **Method:** We conducted a Case-Control study (Pilot study). Thirty patients with singleton pregnancy with a period of gestation of more than 28 weeks and intrauterine death were recruited as cases and thirty low risk patients delivering live appropriate for gestation babies as controls. Venous blood samples were collected from all cases and controls and centrifuged for the serum preparation. Serum homocysteine levels were measured using enzyme cycling based total homocysteine assay. **Results:** No significant correlation was found between maternal homocysteine level and age, weight, BMI and folic acid intake. The birth weights and placental weights of the stillborn foetuses were significantly lower than that of the control groups though growth restricted foetuses were excluded. The mean homocysteine level of women with unexplained stillbirths was found to be higher than that of the control group though the difference could not reach statistical significance. Except for one case, we did not find an abnormal histopathology on the compound microscopic examination of the placentas of the women with stillbirth as well as the control group. **Conclusion:** There was no significant association between maternal serum homocysteine level and unexplained stillbirth. Since a substantial and folate-independent reduction in total homocysteine occurs during pregnancy, total homocysteine may be a better biomarker of future pregnancy outcomes when measured in the non-pregnant state.

[P2.5]

Stillbirths and Lessons for Safe Births

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Objective: To study the various causes of stillbirths in a tertiary care center. **Material & Methods:** One hundred and three women had stillbirth between August 2015 and August 2017. The causes of stillbirth were classified according to the CODAC classification (Cause of Death and Associated Condition) 1. Women with fetal demise before 20 weeks or fetus weighing less than 500 grams were excluded. **Results:** Of the 103 cases, the most common cause of still birth was placental (N 28, 27.1%), including abruptio and placental insufficiency. This was followed by unexplained stillbirths (N 19, 18.4%) and stillbirths due to congenital anomalies (N 18, 17.4%). Sixty five stillbirths (63.1%) could have been prevented with good antenatal care and intensive feto-maternal surveillance. Most of the women (N 81, 78.6%) had either unsupervised pregnancy or less than 4 antenatal visits. **Conclusion:** A substantial number of

stillbirths occurring commonly in the antenatal population can be prevented with good antepartum and intrapartum care. A thorough evaluation for the cause of death should be done for each stillbirth and necessary measures should be taken for its prevention in future.

[P2.6]

Role of Change in Amniotic Fluid Index following Amniotic Fluid Infusion as a Predictor of Pregnancy and Neonatal Outcomes

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Introduction: Amniotic fluid bathes the fetus and plays an important role in its normal growth and development. It is the broth, in which life is nurtured in its earliest and most vulnerable stages. In patients with oligohydramnios, it is imperative to diagnose early and monitor amniotic fluid volume using its surrogate marker, the amniotic fluid index (AFI). We evaluated if there was significant change in AFI after infusion of amino acids and if this could predict pregnancy and neonatal outcomes. **Methods:** We performed a prospective cohort study from June 2015 to June 2017 at our center. We included singleton pregnancies between 18 years and 35 years with oligohydramnios and gestational age from 28-37 weeks. After initial ultrasonography (USG), patients were given infusion of 500 ml of amino acid on alternate days for the first week. Repeat USG was done to measure AFI. The change in AFI and multiple pregnancy and neonatal variables were noted. Appropriate statistical tests were used for analysis of data (Shapiro-Wilk, student t, ANOVA, chi-square and logistic regression). **Results:** We included 52 patients in our final analysis. We demonstrated significant increase in AFI score after infusion of amino acids. We demonstrated that higher improvement in AFI after infusion of amino acids was associated with lower incidence of IUGR, NICU admissions, IUD and higher likelihood of reactive NST, cephalic presentation, term delivery, normal APGAR scores and birth weight. **Conclusion:** We conclude that infusion of amino acids leads to significant improvement in AFI and this leads to better pregnancy and perinatal outcomes.

[P2.7]

Assessment of KAP Regarding the Predictors of High Risk Pregnancy in Urban Indian Women

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Aims & Objective: India is yet to meet the MDG on maternal mortality. The objective of this study was to compare the knowledge, attitude and practices (KAP) among women availing ANC and those who had never availed ANC with reference to recognizing the danger signals of high risk pregnancy. **Material and Methods:** The survey was conducted using a pre-designed, structured questionnaire. 150 women who had availed antenatal care and 150 women who had never availed ANC responded

to the questionnaire. All data was entered in SPSS (Statistical package for Social Sciences) version 10.0 (SPSS, Chicago, Illinois, USA). Cross tabulations were obtained in order to compare women receiving and not receiving antenatal care. **Results:** The mean age of women in our study was 25±7.1 years. Mean family income per month was Rs 10,000 ± 8,000 and 19.5% of the women were illiterate with majority (81.5%) being housewives. Antenatal care used in any of the previous pregnancy was 65.02% in the ANC group. 35.8 % women had studied up to secondary school and 39.8% of their husbands had higher education. Statistically significant difference was found among women who received antenatal care as compared to those who did not in recognizing fever (OR 2.8, 95%CI 1.4-5.5), persistent vomiting (OR 2.35, 95%CI 1.19-4.64), dizziness and fainting (OR 1.18, 95 % CI 0.57-2.42) and antepartum haemorrhage (OR 2.1, 95% CI 1.2-3.86) as danger signs in pregnancy. There was no significant difference between the two groups with regards recognizing breathlessness, persistent palpitations, generalised oedema, previously scarred uteri, multiple abortions and jaundice in pregnancy. **Conclusion:** Significant number of women had a basic knowledge of predictors for anaemia, hypertension and infections in the proactive ANC group, however the rising incidence of unsupervised MTP Pill intake, unsafe abortions, scarred uteri, cardiopulmonary and hepatic disorders with pregnancy pose a new challenge towards which women are negligent. There is an urgent need to develop more specific health education programs. Health personals should strengthen their awareness creation activities in the community with emphasis on the predictors of high risk pregnancy.

[P2.8]

Maternal and Fetal Outcome in Patients With Gestational Diabetes Mellitus Screened by DIPSII Criteria

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Introduction: Gestational diabetes mellitus is defined as carbohydrate intolerance of varying degree of severity with onset or first recognition during pregnancy. **Screening:** For detection and diagnosis of gestational diabetes mellitus, AICOG recommends universal screening but has two step procedure. ADA & IADPSG recommend both fasting blood sugar and 1 hr & 2 hr plasma glucose level and that too in high risk group. DIPSII guidelines recommends universal screening for gestational diabetes mellitus. According to DIPSII guidelines, 2hrs plasma glucose value >140 mg/dl were considered as gestational diabetes mellitus. **Aims and Objectives:** To assess maternal and fetal outcome in patients documented with GDM. **Material and Methods:** The study was conducted on 64 patients with GDM according to DIPSII criteria. Venous blood samples drawn at 2 hours interval for estimating blood glucose. The blood glucose was calculated by glucose oxidase peroxidase method. Patients were managed with dietary modifications and insulin and maternal complications during pregnancy were noted. Mode of termination of pregnancy, indication of caesarean sections in these patients, fetal outcome and NICU admissions were noted. Inclusion Criteria Antenatal patients attending antenatal clinic and diagnosed with GDM Exclusion Criteria|Pre-existing medical disorders. **Observations:** Diabetes associated maternal

complications were noted in 34 patients (53.12%). Pregnancy terminated by caesarean section in 29 patients (45.31%). 3 patients had intrauterine foetal demise (4.68 %) and 12 babies had NICU admissions. **Conclusion:** GDM does increase the morbidity of the mother and the fetus and hence timely intervention is the rule.

[P2.9]

Dyanamic Changes in Myometrial Thickness during Third Stage

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Objective: Sonographic myometrial thickness changes and its predictability for third stage complications. **Method:** This prospective study was conducted on randomly selected 100 low risk primigravidae with term gestation with cephalic presentation delivering at tertiary care over a period of one year. Serial ultrasound measurements done over two minute duration during third stage of labor at four places: Anterior upper and lower uterine segment, posterior upper and lower uterine segment. The myometrial thickness was evaluated as a function of time. Any complications in third stage was noted. **Result:** Outcome was a significant linear increase in the mean myometrial thickness of the upper uterine segments and a significant linear decrease in the mean myometrial thickness of the lower uterine segments was observed in 89%. However 11% had third stage complications like atonic PPH (8%) and retained placenta (3%), in all these parturients was no linearity change was found. **Conclusion:** Myometrial thickness assessed sonographically, increase in Upper uterine segment and linear decrease in lower uterine segment during normal third stage of labor. Any deviation from this pattern is a predictor of third stage complication. Dyanamic myometrial changes sonographically can help in predicting abnormal third stage.

[P2.10]

Knowledge, Attitude and Practice Regarding Preconceptional Counselling among North Indian Females

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Objectives: To assess women's knowledge about preconceptional counselling, the prevalent attitude and associated factors in preconception care in a tertiary level hospital in New Delhi. **Methods:** This cross sectional study was conducted in the Out Patient Department of Obstetrics and Gynaecology, Max Superspeciality Hospital, New Delhi. A close ended structured questionnaire was used to conduct the interview regarding preconception health care services. We analysed data from 416 females in the age group 20-40 years. The proforma included knowledge regarding importance of counselling, demographic and socioeconomic factors, concept about target population, risks of unplanned pregnancy and best way to create awareness for the same. **Results and Conclusions:** Out of 416 respondents, 89(21.15%) had heard about preconceptional counselling. Of these only 63(15.14%) respondents considered

it to be important. Overall 85(20.4%) took folic acid during initial 2 months of conception and 15 cases(3.6 %) during the periconception period . The most common source of information were physicians (63.7%), newspaper, books, internet (21.7%). According to 303 females (72.8%), it was meant for females having problem in conception. Among females who had heard about preconceptional care,19.1% had taken preconceptional counselling, 57.3% considered them healthy and no need for any tests,14.6% didn't know whom to approach for it and 8.9% avoided because of stress of getting diagnosed with new disease. Educational status had significant association with awareness and practice of preconceptional counselling while age group, marital age, religion had no significant association. The results suggest that there is need to emphasise on preconception care whenever we find a window of opportunity -educating school children ,interacting with young females during other illness etc. to increase their knowledge.

[P2.11]

Maternal and Fetal Outcome Using Simple Scoring System

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Objective: To study the maternal and fetal outcome based upon risk scoring system. **Methodology:** A prospective study was done in 373 women who were in 3rd trimester admitted in tertiary care hospital over a period of 1 month. They were categorized into no risk, low risk, moderate risk and high risk according to Dutta and Das risk scoring system (1990) and maternal and fetal outcome were compared. **Result:** The mean age was 25.28 years. Out of 373 women, 19%(n 71) were having no risk, 32.5% (n 121) were low risk, 37%(n 136) were moderate risk and 12% (n 45) high risk. It was found that 47% of women with moderate risk and 60% with high risk had cesarean section as compared to 12.5% having no risk and 36% of low risk. Approximately 47% high risk women had preterm deliveries as compared to 11% with low risk. Approximately 21% (n 15)of babies of no risk and 26% (n 31) of babies of low risk were having birth weight <2.5kg compared to 40% (n 57) and 53%(n 27) of moderate and high risk respectively. Three percent of babies of low risk mothers had low apgar score (<7) as compared to 12% babies of high risk mothers. Rate of still born in high risk women was almost 4 times compared to that of low risk (9.8% versus 2.4%). **Conclusion:** This scoring system can help in triage of pregnant women in for providing high risk and critical care. This scoring system can also be adopted by peripheral health centers for referral services.

[P2.12]

Efficacy of Betadine Vaginal Toileting before Caesarean Section in Postoperative Infections

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Objective: To evaluate the efficacy of preoperative betadine vaginal toileting in reducing post caesarean infections

(endometritis, febrile illness, wound sepsis). **Material and Methods:** This prospective longitudinal study was conducted at Maulana Azad Medical College, New Delhi over 3 months among 200 women who underwent caesarean delivery. Inclusion criteria were defined as women undergoing caesarean section. Exclusion criteria included placenta previa, active genital herpes, cord prolapse, chorioamnionitis, allergy to iodine. After taking informed consent, subjects were divided into two groups by simple randomisation method using computer generated random numbers- Group 1(case) - Subjects who underwent 5% povidone iodine sponge stick cleansing in all the fornices and walls of vagina for 30 seconds after foley's catheter insertion and before abdominal scrubbing. Group 2 (control) - Subjects who didn't receive betadine vaginal toileting before caesarean section Subjects were followed for 10 days postpartum (or till suture removal/ discharge from hospital, whichever was late). Demographic data, operative details and postoperative parameters were compared between the two groups. **Results:** Both groups were matched for baseline patients' characteristics (age, BMI, gestational age, operative time). Women who received preoperative betadine vaginal toileting had markedly less incidence of endometritis (case-3%, control-10%, $p<0.05$). Incidence of postoperative febrile illness (case-6%,control-12%, $p>0.05$) and wound sepsis (case-5%, control-12%, $p>0.05$) were found to be less but not significant between both groups. **Conclusion:** Preoperative vaginal cleansing helps in reducing postoperative morbidity by decreasing incidence of postoperative infection.

[P2.13]

Assessment of effectiveness of systemic Methotrexate for treatment of selected cases of ectopic pregnancy: A Review

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Objective: The aim is to review the effectiveness of systemic Methotrexate for treatment of selected cases of ectopic pregnancy.

Methods: A retrospective review of 32 case of ectopic pregnancy admitted through Obstetrics & Gynaecology Emergency Department of UCMS & GTB Hospital, Delhi, from August 2014 to August 2017. Selection criteria for medical management included hemodynamically stable patients, adnexal mass less than 4 cms, Beta hCG level less than 5000 IU/L, minimal free fluid in POD, and patients with no contraindication to methotrexate.

Results: A total of 32 cases of ectopic pregnancy who received systemic Methotrexate were included in this study.40% of these case were successfully treated with single dose of Injection methotrexate. 38% patients required additional dose of Injection Methotrexate. A total of 78% patients were successfully treated with systemic Methotrexate. Of the total number of patients who received single dose of Injection Methotrexate 22% underwent surgery for failed medical management (in view of unsuccessful or ineffective results/ruptured ectopic /tubal abortion).

Conclusion: Medical management of ectopic pregnancy with systemic Methotrexate is a safe and effective alternative to surgical treatment provided a proper case selection and accurate diagnosis is made at time of admission.

[P3.1]

Ovarian Ectopic Pregnancy: A case report

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Introduction: Ovarian ectopic pregnancy is a rare variant of ectopic implantation. It ends with rupture before the end of the first trimester. Ovarian ectopic incidence after natural conception ranges from 1 in 2000 to 1 in 60,000 deliveries and accounts for 3 % of all ectopic pregnancies.

AIIMS and Objectives: Reporting a case of ovarian ectopic and defining the role of surgery in the management.

Background: The incidence of ovarian ectopic has increased in the last 50 years attributable to increased use of intrauterine devices, ovulatory drugs and assisted reproductive technologies. A history of PID has been implicated as well. ovarian pregnancy is frequently misdiagnosed clinically as tubal ectopic pregnancy.

Case: 24 year old primigravida presented with lower abdominal pain, minimal vaginal bleeding with 8 weeks of amenorrhoea. She did not have any past history of PID or infertility treatment. Her vitals were BP 99/58 MM of Hg, PR 100/min pallor present with abdominal guarding and tenderness. Per vaginal had bleeding and right forniceal fullness and tenderness. Managed surgically and recovery was uneventful.

Conclusion: Ovarian ectopic pregnancy is rare. Despite modern diagnostic modalities these patients continue to present with circulatory collapse. Usually surgical treatment in the form of oophorectomy or wedge resection of the ovary is required.

[P3.2]

Ovarian Leiomyosarcoma- Rare case

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Introduction: Leiomyosarcoma of the ovary is rare disorder with aggressive behavior and poor prognosis mainly occurring in post menopausal women. It represents 1% of ovarian tumors. We report a case of 57 years old P2L2 post hysterectomized presented with complaint of lower abdominal discomfort for 1 week. No history of any bowel/bladder complaint or bleeding per vaginum. She had undergone right ovarian cystectomy in 1986 followed by TAH with right salpingo-oophorectomy in 1996 and breast adenoma removal in 2004. MRI shows large well defined lobulated lesion 16x 14 cm, heterogeneous enhancement on post contrast scan, seen in pelvis extending into abdomen. On examination, there was no lymphadenopathy, abdominopelvic mass felt up to umbilicus; hard fixed lump 15x 15 cm filling the cavity per vaginally. Tumor markers along with Paps – normal. Underwent left ovariectomy with appendectomy.

Results: Frozen section: spindle cell tumor. Histopathology: highly cellular lesion composed of spindle cells with severe nuclear pleomorphism with bizarre multi-nucleate giant cells with frequent mitosis including atypical forms consistent with leiomyosarcoma. IHC markers: diffusely positive for desmin and SMA. In view of post-op PET CT scan showing liver and lung metastasis, received 6 cycles of adjuvant chemotherapy.

Conclusion: Leiomyosarcoma is rare incidental disease, with few literature reports, primarily effecting post menopausal women. Treatment is based on surgical approach while role of complementary CT+RT is not clear due to lack of data. Prognosis

is usually poor but early diagnosis and surgical staging with optimal cytoreduction may improve survival.

[P3.3]

Steroid Cell Tumor - A rare ovarian tumor

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Ovarian steroid cell tumors are sex-cord stromal tumors that arise from lutein cells or leydig cells. These are very rare- <0.1% of all ovarian tumors. Rarely may they arise in the adrenal cortex from the adrenal rest cells. Some of these tumors may be functional and secrete hormones. Nearly 56-77% of the cases present with hyperandrogenism. A 60-year old lady presented to us with gradual onset abdominal distension for two years. She had no other complains and had undergone hysterectomy 20 years back. Her abdomen was over distended due to a large, firm, non-tender mass. Imaging studies revealed a large, mainly cystic abdominopelvic mass; however its origin could not be made out. The left adrenal gland was found to be bulky but morphologically normal. Serum levels of CA 125 and CEA were normal. Exploratory laparotomy was done. A large thin walled cyst measuring 25 x 20 x 16 cm occupied the pelvis and abdomen. Ovaries were not visualized. Cystectomy was done; it contained 4.2 litres of straw coloured fluid. Frozen section report of the cyst wall was suggestive of neuroendocrine tumor. Final histopathology report was of benign steroid cell tumor not otherwise specified; however in view of bulky adrenals possibility of adrenal cortical tumor was also considered. Serum DHEAS levels, checked postoperatively, were reported to be normal thus ruling out adrenal pathology. In view of the benign nature of ovarian pathology, no further intervention was required. The patient had an uneventful postoperative recovery and was discharged after suture removal.

[P3.4]

Merkel Cell Carcinoma of The Vagina – A case report

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Introduction: Merkel cell carcinoma is a rare malignant neoplasm, mostly affecting the skin of the head and neck and extremely rare in the genital area. Very few cases involving vulva and vagina have been reported in the literature. The origin of this carcinoma is the merkel cell of the basement membrane of the squamous epithelium.

Aim: To present a rare case of merkel cell carcinoma of the vagina: Case report|A 28 year old P2 came to our gynae clinic presenting with complaints of swelling in the perineal area. On examination, a firm non-tender mass of approximately 4cmx3 cm was present in the lower part of the vagina, near the mucocutaneous junction. The overlying skin was adherent to the mass, however it was free from the underlying structures and the regional lymph nodes were not enlarged. Wide excision was carried out, histopathology of the mass showed merkel cell carcinoma of the vagina with positive margins. Metastatic work up including MRI of the pelvis was carried out, and a repeat

wide excision with removal of adequate margins was carried out after 3 weeks. Post op recovery was uneventful and patient is clinically well on follow up at 4 months.

[P3.5]

A Rare Case Of Uterine Lipoleiomyoma Presenting As Prolapsed Cervical Mass And Acute Urinary Retention in a Nulliparous Woman

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Introduction: Lipoleiomyoma is a rare benign type of uterine leiomyoma reported usually after third decade of life. We present a case of cervical lipoleiomyoma in young nulliparous female who presented with prolapsed uterine mass and acute urinary retention.

Case Report: A 24 years nulliparous female presented with pain and lump abdomen and on and off difficulty in passing urine for last 4 months. Examination revealed enlarged uterus corresponding to 24 weeks gravid size. MRI revealed large cervical fibroid. Plan was made to give 3 doses of GnRH analogue followed by surgery. After 3rd injection, patient presented in emergency with acute urinary retention and large mass prolapsed through vagina (20x10cm).

Results: The prolapsed mass was irreducible and extremely tender and foul smelling so decision for emergency surgery was taken. Prolapsed part of myoma was removed vaginally. But as there was difficulty in reaching the base and cervical rim was not accessible, laparotomy was done and myomectomy (25x10cm cervical myoma) was completed successfully. The histopathology report of specimen revealed features of lipoleiomyoma.

Conclusion: The case emphasizes the possibility of lipoleiomyoma in large uterine masses presenting in younger age group. Also the possibility of prolapse of large cervical myoma should be kept in mind especially after giving GnRH analogues. The role of immediate surgical intervention in patients presenting with prolapsed myoma and acute urinary retention is emphasized.

[P3.6]

Unicornuate Uterus with Non-Communicating Rudimentary Horn and its Endoscopic Management: A case report

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Abnormal fusion of mullerian duct or insufficient absorption of the uterine septum results in the anatomical abnormalities in the female genital system. The frequency of congenital uterine anomalies varies in fertile female population between 1/200 to 1/600. Unicornuate uterus with rudimentary horn is a very rare anomaly with a frequency of 1/100,000. These patients present with various gynaecological and obstetrical complications like dysmenorrhea, dyspareunia, chronic pelvic pain and rarely with

acute abdominal symptoms following distension and torsion of the rudimentary horn. Obstetrical complications seen include abortions, ectopic pregnancy, preterm labour and rupture of rudimentary horn. The ultrasound, MRI and laparoscopy along with hysteroscopy are the important tools in diagnosing this rare anomaly. We are presenting a case of 16 year old unmarried girl who presented to us with severe progressive dysmenorrhea since menarche. Patient was initially diagnosed as bicornuate uterus on ultrasonography. However MRI confirmed the presence of unicornuate uterus with rudimentary horn. We performed diagnostic/operative hysteroscopy and laparoscopy followed by excision of the rudimentary horn. Key words: Unicornuate uterus, Rudimentary uterine horn, Laparoscopy, Hysteroscopy, Dysmenorrhea.

[P3.7]

Low Dose Mifepristone in Submucosal Fibroid: A case report

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Objective: Low dose mifepristone is one of the options for medical management of abnormal uterine bleeding in leiomyomas (AUB – L) except for FIGO type SM (0 and 1) or type 2/3 and hybrid fibroid with large submucosal component. These cases do not respond to medical management but medical management may be required when surgery is not immediately feasible.

Report: A 40 year old lady, P4L4, known case of chronic myeloid leukemia on oral imatinib presented with heavy menstrual bleeding with PBAC score of 875. On evaluation, she was severely anemic (Hb -7 g/dl), had leucocytosis, uterus was 14 weeks size on per vaginal examination and USG revealed a large submucosal fibroid of 6x5 cm which was distorting the cavity. She was planned for surgery but preoperative optimization of hemoglobin and blood counts required some time. She was started on tab mifepristone 25mg alternate day; meanwhile hematology clearance for surgery was awaited. Patient became amenorrhic within one month of starting of therapy and remained asymptomatic till 9 months of treatment when she was electively posted for surgery after hematological optimization and Hb of 11g/dl. She underwent a total laparoscopic hysterectomy and post operative period was uneventful.

Conclusion: Low dose mifepristone can be considered for short term treatment for submucous fibroid in symptomatic women as a pre operative therapy.

[P3.8]

Uterus Didelphys with Obstructed Hemivagina and Ipsilateral Renal Agenesis (Ohvira Syndrome): A case report

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Background: Obstructed hemivagina and ipsilateral renal anomaly (OHVIRA), or Herlyn-Werner-Wunderlich syndrome, is a rare Mullerian duct anomaly with uterus didelphys, unilateral obstructed hemivagina, and ipsilateral renal agenesis. Patients with this anomaly usually present after menarche with pelvic

pain and/or a mass and rarely, in later years, with chronic vaginal discharge and primary infertility. Strong suspicion and knowledge of this anomaly are essential for a precise diagnosis.

Case: 21 year old married female presented with complaint of chronic vaginal discharge on further clinical, radiological and laproscopic evaluation was diagnosed as a case of OHVIRA syndrome with uterus didelphys.

Summary and Conclusion: OHVIRA syndrome should be considered among the differential diagnoses in young females with renal anomalies presenting with chronic vaginal discharge, vaginal swelling, pelvic mass, symptoms of acute abdomen, and acute urinary retention

[P3.9]

Bleeding Cervical Mass - A diagnostic dilemma

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Background: Gestational trophoblastic disease (GTD) comprises a spectrum of abnormal proliferation of trophoblastic cells ranging from benign to malignant potential. Choriocarcinoma is a malignant trophoblastic tumor that commonly arises within the uterine corpus and rarely in uterine cervix, fallopian tube, ovary, vagina, vulva, and extragenital organs. Primary choriocarcinoma of the cervix is a very rare entity.

Case: A 40 year old patient had come to our OPD with irregular vaginal bleeding since evacuation 3 weeks back for incomplete abortion. She bleed heavily in OPD when speculum was introduced to examine her. She had 4 x5 cm cervical mass on the posterior lip of cervix. She underwent emergency hysterectomy with removal of left parametrium and involved vagina. Histopathology report revealed cervical choriocarcinoma involving vagina. She had multiple metastasis in both lung field and residual pelvic mass. She was accepted as FIGO stage 3b. She received multidrug chemotherapy (EMACO) postoperatively and was followed up with β -HCG which had satisfactory fall. Lung metastasis and pelvic mass resolved with chemotherapy. Patient tolerated chemotherapy well and is fine till date.

Conclusion: Primary choriocarcinoma of cervix should be considered in patients presenting with AUB with cervical mass with or without amenorrhoea in the reproductive age group. One should proceed with beta-HCG and USG doppler of the cervical mass

Keywords: choriocarcinoma, cervix, primary & β -HCG, EMACO chemotherapy

[P3.10]

Mixed Mullerian Tumor of Endometrium with Renal Hemangioblastoma: A rare case report

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The detection of two primary synchronous malignancies incidentally is a rare entity. The need for preoperative

histopathological diagnosis has to be stressed upon to differentiate metastasis from synchronous malignancies and to guide further management. In our case of high grade endometrial carcinoma, a renal cell carcinoma was detected incidentally on preoperative radiological investigations. The renal mass on radiology was highly vascular and raised a suspicion of Renal Cell Carcinoma (RCC) but couldn't be confirmed on HPE. Post radical surgery it turned out to be a renal hemangioblastoma which is a very rare benign tumor and very challenging to diagnose preoperatively and hence over treated in most cases. Thus, imaging techniques like USG/MRI help in localizing the disease but it is mandatory to do histological confirmation for appropriate management of both the primaries.

[P4.1]

Spontaneous Rupture of an Unscarred Uterus: A case report

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Introduction: Rupture of uterus is an obstetrical complication characterized by a breach in the uterine wall and overlying serosa. It occurs particularly during labour and it's a hazardous condition to both maternal and foetal health. Postpartum haemorrhage, shock, need for blood transfusion and hysterectomy are the consequences following uterine rupture

Aim and Objective: By presentation of case of spontaneous rupture of previously intact uteri, we sought to emphasize important aspects of this rare and dangerous event.

Background: Rupture of the unscarred pregnant uterus is a rare event, estimated to occur in 1/5700 to 1/20,000 pregnancies.

Case Report: We report an unusual case of spontaneous rupture of an unscarred uterus in a 32-year-old P2L2A2 who was referred to our department 12 hrs after forceps vaginal delivery of 3.5 kg baby with significant postpartum bleeding. She had 1 previous normal vaginal delivery 4 years back and 2 D&C S in last 2 years. Her vitals were stable, her blood tests showed severe anaemia, USG and CT scan revealed hemoperitoneum. The patient was hemodynamically stabilized with fluids and blood products and decision of laparotomy taken for further evaluation, cervical tear was found on the left lateral side, uterine rupture of 6x5 cm was discovered on the left posterolateral wall not extending to the cervical tear and hemoperitoneum of about 2L, and the same was repaired. The post op period was uneventful.

Conclusion: Intrapartum rupture of the unscarred uterus is a rare obstetric emergency. Maternal and perinatal outcomes are optimized by awareness of risk factors, recognition of clinical signs and symptoms, and prompt surgical intervention.

[P4.2]

Pregnancy in Uterine Didelphys delivered by Caeserean section - A case report

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Introduction: Uterine didelphys is the least common Mullerian duct anomaly (MDA). Didelphys uterus has double uterine bodies with two separate cervixes and a double or septate vagina.

Patient with didelphys uterus may present as asymptomatic or with primary infertility or spontaneous abortion, pre term labour, malpresentation or still birth.

Objective: This report discusses a rare case of didelphys uterus conceived successfully, reached 36 weeks of gestation and delivered by caesarean without any significant complications.

Case Report: A 32 year Primigravida married for 2 years, conceived spontaneously and booked, presented at 36 weeks of gestation with severe pre-eclampsia with uterine didelphys diagnosed in antenatal USG scan. On per vaginum examination - longitudinal vaginal septum with two cervixes felt. Case was posted for caesarean section in view of severe pre-eclampsia with vaginal septum and poor bishops score. LSCS was done and a male baby of 2.6 kg was delivered as cephalic from left side uterus, another non gravid uterus was found on right side. Each uterus had one fallopian tube and one ovary and separate cervixes, opening into separate vaginas. Her post-operative recovery was uneventful.

Conclusion: Didelphys uterus has varying reproductive and gestational outcomes in comparison to other common abnormalities. The ability to conceive remains a debatable issue. Didelphys uterus is not an indication for caesarean section unless vaginal septum is thick and inelastic causing vaginal dystocia. More studies are needed to better determine its reproductive and gestational outcomes.

[P4.3]

Rh Isoimmunisation due to Unusual Antibodies: A case report

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Haemolytic disease of the newborn is a well-recognised entity because of the isoimmunisation of Rhesus D-negative mother in an Rh-positive fetus. Although anti-Rh(D) was once the major etiology of haemolytic disease of the fetus and newborn (HDFN), the widespread adoption of antenatal and postnatal Rhesus immunoglobulin has resulted in a marked decrease in the prevalence of alloimmunisation due to the RhD antigen present during pregnancy. Maternal alloimmunisation to other red cell antigens remains the cause of fetal disease since no prophylactic immunoglobulins are available to prevent the formation of these antibodies [2]. We report a case from Lok Nayak Jaiprakash hospital of a patient with AB negative blood group with positive indirect coombs test with rising MCA-PSV titres on follow up visits. Intrauterine transfusion with O negative leucodepleted blood was done and fetus blood group reported to be B negative with positive Direct Coombs test. On further evaluation request for screening of unusual antibodies was made and anti c, anti d and anti g antibodies was found to be positive. The baby was treated postnatally with double volume exchange transfusion with same compatible blood. However, the baby expired after 2 weeks. We highlight the importance of conducting irregular antibody screening for women with significant obstetric history and fetal hydrops. This could assist in diagnosing and successfully treating the fetus with appropriate antigen negative cross-matched compatible blood.

[P4.4]

Kyphoscoliosis Complicating Pregnancy- A case report

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Aims & Objectives: To study the pregnancy outcome in moderate congenital kyphoscoliosis patient.

Methods: A 24 year old un-booked primigravida having moderate degree of thoracolumbar congenital kyphoscoliosis was referred at 30 weeks pregnancy. In early second trimester, because of worsening dyspnoea, she was investigated for first time. She was found to have restrictive lung disease with moderate-severe tricuspid regurgitation & PAH. She was started on Met-xl, dytor, sildenafil citrate. As her condition worsened, she was referred to AIIMS at 30 weeks. During admission her pulse rate was 112 b/min, blood pressure-112/70 mm of Hg, respiratory rate-30 breath/min, spo2-84%. During her stay in hospital she required on and off CPAP due to co2 retention. Strict fetomaternal surveillance was done with biweekly manning and daily ABG analysis.

Result: Elective classical preterm caesarean section done at 32+5 wk. POG in view of progressive maternal decompensation. Alive female baby, appropriate for date was delivered. Postoperative period was uneventful with no maternal and fetal complications. She was discharged on D-13 in stable condition with advice of oxygen inhalation by nasal prongs during period of exertion.

Conclusion: Although kyphoscoliosis greatly affects the normal pulmonary physiology of pregnancy especially in mid and late trimester, patient can be safely managed with favourable outcome with the combined multispecialty approach from obstetrics and gynaecology, anaesthesia, and cardiopulmonary departments.

[P4.5]

A Case of Slow Uterine Perforation in an Unscarred Uterus with Placenta Percreta

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Background: Spontaneous uterine rupture is a rare complication and is extremely uncommon in an unscarred uterus in a non labouring patient. History of cesarean section, myomectomy, partial uterine resection, uterine anomalies are known risk factors for uterine rupture. Early signs in a case of slow uterine perforation may not exist and its occurrence may implicate a high morbidity and mortality in both the fetus and the mother. Here we report a case of slow spontaneous perforation of an unscarred gravid uterus with favourable fetomaternal outcome at 32 weeks of gestation.

Case Report: A 30-year-old, G5P2L2A2 presented at 32 weeks of gestation with acute abdominal pain and inability to pass flatus and faeces since last 2 days. She was dehydrated with tachycardia and BP of 90/60, signs of peritonitis. The uterus was relaxed with maintained uterine contour and a closed cervical os. An emergency exploratory laparotomy was done, peroperatively, rent of the uterine fundus was found with a well preserved fetus in intact amniotic sac partially extruding

through the rent. A hemoperitoneum of approx. 500cc was present. Through uterine rent a fetus weighing 1150 grams was delivered alive. Hysterectomy was performed due to partial placenta percreta. The total blood loss was approximately 1.5 litre. Her recovery period was uneventful, she was discharged on the 15th postoperative day in healthy condition.

Conclusion: In a case of placenta accreta with acute abdomen, uterine perforation should also be considered in differential diagnosis.

[P4.6]

Rare Complication of Ceasarean Section: Uterocutaneous Fistula

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Uterocutaneous fistula is a rare complication occurring mostly secondary to post partum or postoperative period wound complications. A 26 year old Para 1 live 1 woman presented to us with complain of bleeding from her pfannelsteil scar for 1 year starting two months post caesarean operation. There was history of wound gape on post operative day 20 following which she had undergone wound debridement and resuturing in a private hospital. She was advised medroxyprogesterone acetate twice daily for 3months following which she continued to have bleeding from scar site. On examination the fistulous tract was seen on right side of scar site around 10 mm thickness as evaluated by fistulogram. The lesion extended to uterine fundus connecting endometrial cavity with the skin. Excision of fistulous tract was performed with debridement of necrotic tissue in the uterus and uterine repair. A Malecots catheter was left inside the uterine cavity for allowing continuous drainage. The postoperative period was uneventful. At 3 months post operative follow up she has no recurrence. Uterocutaneous fistulas can be managed successfully with surgical excision. A meticulous primary surgical procedure and prevention of postoperative surgical site infection with wound care and appropriate and adequate antibiotic cover can help prevent such complications.

[P4.7]

A Study of Thyroid Function Tests in Pregnant Women Attending Antenatal Clinic

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Objectives: To see the proportion of pregnant patients visiting an urban hospital antenatal clinic with thyroid dysfunction. To study the changes in TSH, T3, T4 with advancement of pregnancy.

Methods: 200 subjects attending the antenatal clinic were enrolled for the study. Serum T3, T4, TSH and AntiTPO antibodies were estimated at first visit to antenatal clinic (at any time before 12 weeks). Repeat T3, T4, TSH, AntiTPO antibodies in the same patients were performed in the second and third trimester.

Results and Conclusion: The Prevalence of Hypothyroidism in the study population was 68%. Mean TSH in Hypothyroid group was 3.3 in first trimester, 3.22 in second trimester, 4.31 in third trimester whereas mean TSH in the Euthyroid group was 1.53 in first trimester, 1.73 in second trimester, 2.13 in the

third trimester. Percentage of Hypothyroid patients detected in the first trimester was 66.17% (90 out of 136), second trimester 7.35% (10 out of 136), third trimester 26.47% (36 out of 136). Out of 136 Hypothyroid patients, 13 patients (19.11%) had AntiTPO antibodies positive.

[P4.8]

Advanced Abdominal Pregnancy: a Rare Case Report

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Objective: To discuss management of an advanced abdominal pregnancy

Case Report: 30/F G2P1L1, non consanguinous marriage, presented with 28wks sized abdominopelvic mass, which was freely mobile from side to side, non tender, with fetal parts readily palpable. All her antenatal investigations were within normal limits. MRI suggested a single live fetus corresponding to 23 weeks period of gestation within a sac like structure (of size 15x15x13cm) with epicenter in abdomen at L3-S1 vertebral levels; Placenta situated in left lateral aspect of sac, in close proximity of uterus and left cornua angulated towards sac. Uterus measured 8x7x4cm situated inferior to sac, ET 20mm, normal endocervical canal, liquor reduced in amount, fetal cranium deformed with flattening of bones of cranial vault. Doppler showed reversal of flow. As this was a severely deformed fetus with severe Doppler changes, plan was made for termination of pregnancy. Laparotomy+ abdominal pregnancy extraction was done under GA. Intraoperative findings revealed 20x25cm amniotic sac lying in the abdominal cavity with fetus and placenta in it. Left tube and infundibulo-pelvic ligament was stretched over the sac and there was neovascularization from the omentum. Fetus and placenta were extracted and hemostasis was ensured. Baby was 830g male with apgar score 2/2/2 with multiple gross deformities involving skull, chest, limbs and arthrogypsis. Baby was put on oxygen but succumbed to death within 30min of life. Patient received 2 packed RBC in post operative period and had uneventful recovery.

Conclusion: Advanced abdominal pregnancy requires timely intervention and can be managed effectively by a team of experts.

[P4.9]

Chronic Abruptio in Early Second Trimester Mimicking Partial Mole- A rare case report

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Introduction: Placental abruptio is known as one of the most serious complications in pregnancy with detrimental effect on both the mother and the fetus. The clinical presentation and the ultrasound findings may vary to a large extent.

Case: A rare case of a 30 year old, G3P2L2 at four months of gestation, who presented with the complaints of dark altered bleeding along with leaking per vaginum for eight days and pain lower abdomen for one day. On examination, she had marked pallor, there was tachycardia associated with high grade fever

with chest findings suggestive of lower respiratory tract infection. Obstetric examination revealed a uterus corresponding to 30 weeks of gestation with raised basal tone. Ultrasound findings were a dead fetus of 19 weeks 2 days with diffusely enlarged placenta with multiple cystic areas suggestive of intrauterine demise with partial mole. Beta hcg was 50 mlu/ml. A provisional diagnosis of placental abruption was made and decision for induction was taken after stabilizing the patient with blood transfusions and intravenous antibiotics. She didn't respond to medical methods of induction, and was taken up for emergency hysterotomy. Per-operatively, uterus was grossly enlarged and couvelaire, a macerated fetus of 200 gm was delivered along with 1.8 kg of retroplacental clots. **CONCLUSION:** This case report is important as chronic placental abruption in the second trimester is rare and a high index of suspicion is imperative to differentiate it from other conditions such as partial mole. So a high index of suspicion is needed to make a diagnosis and manage the patient promptly for a favourable patient outcome.

[P4.10]

Successful Management Pregnancy Induced Bicytopenia: A case report

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Pregnancy associated with aplastic anaemia is associated with significant morbidity and mortality for both mother and fetus. We report a case of a 23 year old woman who was diagnosed with pancytopenia during pregnancy. Patient was diagnosed to have bicytopenia at 3 months and started on oral iron. One month later her hemoglobin was 3g% and she was referred to a higher centre for blood transfusion where she received 3 units of prbc. Within 15 days however, her hemoglobin dropped to 3g% and platelets to 13,000. She was following in hematology department of AIIMS with weekly RBC and Platelet transfusion maintaining hemoglobin and platelet in the range of 8g% and 10,000 respectively. At 36 weeks, she had bleeding from gums and purpura over hands for which she was admitted and monitored. At 37 weeks and 4 days she leaked and immediately two single donor platelets (SDPs) were transfused at a platelet count of 4000. She underwent a caesarean section received another SDP in post-partum period. Despite severe thrombocytopenia and anemia, pregnancy was successfully managed by a multidisciplinary management in junction with the hematologists and the transfusion medicine specialists.

[P5.1]

Knowledge, Attitude and Practices of Contraception among Postpartum Women at Kasturba Hospital

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Objectives: a) To assess the knowledge, attitude & practices regarding contraceptive methods among postpartum women. b) To educate them to use one of the family planning method. **Methods:** A cross-sectional study was conducted in the department of obstetrics and gynecology at Kasturba hospital between August 2017 and September 2017. A total of 100

postpartum women admitted in postnatal ward were interviewed after taking verbal consent. The data was collected using pre-structured questionnaire. Statistical test like percentage, chi-square test was applied to know the association. The women were counseled about various methods of contraception. **Results:** 82% women were aware of some method of contraception with IUCD and barrier being known to most of them. Significant association was found in relation to education. Major source of information was social circle (44%). Only 48% had practiced any method of contraception before but after counseling 88% women wanted contraception. 92% patients did not know about emergency contraception. None of the women interviewed had heard of the concept of spacing. **Conclusion:** There is a great lacuna in the awareness of contraception, emergency contraception, newer methods of contraception and spacing in the women under study. Therefore, regular and comprehensive counseling is a must to all pregnant women at all level of healthcare delivery system. Proper and correct information should be provided about various methods of contraception and patients should be given a choice to choose the method of their choice.

[P5.2]

Postpartum Care- Knowledge Attitude and Practices of Postpartum Women Delivering at a Tertiary Care Centre in Northern India

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Objectives: The aim of the study is to analyse knowledge, perspective and practices of postpartum women delivering at a tertiary care centre in northern India about postpartum care and services available and their utilization. **Methodology:** In this descriptive cross sectional study, 200 eligible mothers were randomly selected from our postpartum clinic. Data collection tool included a demographic questionnaire for assessing maternal knowledge. **Results:** Among 200 mothers assessed, highest level of knowledge was about exclusive breast feeding (89.5%) and least level of knowledge about benefits available under health programmes (65%). Knowledge about postpartum contraception- 81%|Immunization of baby -77.5%. Emotional support from family- 77.5%. Knowledge about perineal hygiene- 77%. Knowledge about danger signs and when to report- 73.5%. **Conclusion:** Considering the moderate level of knowledge about postpartum care and services and lacunae, necessary intervention such as educational workshops, use of media and focus on quality of care is essential.

[P5.3]

To Study the Knowledge, Attitude and Practice of Pregnant Women Regarding Peri-Conceptional Folic Acid Intake

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Objective: To study the knowledge, attitude and practice of pregnant women regarding peri-conceptional folic acid intake.

Method: Questionnaire based prospective study conducted on OPD and IPD patients of a Lok Nayak Hospital. A total of 1000 women were recruited. Data analysed and studied. **Results and Conclusions:** 29% women were aware of folic acid of which 81% thought it was important and 95% had taken folic acid in their antenatal period, but only 6% knew when to start it and for how long (started 3 months before conceiving and continued throughout pregnancy). 93% women had heard from their physician about the same. 41% women knew that it can prevent Neural tube defects. 1.5% women had a previous child with a neural tube defect of which 100% were advised peri-conceptual folic acid in next pregnancy. Of the women aware about folic acid 89% were between the ages of 21-30 years and 24% held a degree of post-graduate status. 57% of the aware women were hindus and 26% had a monthly household income of more than 20,000 rupees. Low socio-economic status, age less than 20 years and lower educational status were high risk factors for not taking folic acid. Educational interventions are required to inform women of the benefit of peri-conceptual folate supplementation and to increase folate intake among them.

[P5.4]

Emergency Contraception - An Enigma

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Aim: To evaluate the knowledge, attitude and practices of emergency contraception among nursing officers. **Methodology:** Ongoing prospective cross sectional study conducted amongst randomly selected 150 nursing officers of BJRM and BSA Hospitals, Delhi, using a structured questionnaire. **Results:** The study group comprises of graduates, with a para medical background. 87.9% of them are Hindu's while 10.8% are Christians. Though 90.4% of them are aware of the term emergency contraception (EC) but only 55.42% could correctly identify the methods used as EC. Surprisingly 15.66% believed that condoms and 4.81% believed that abortifacients could be used as EC. The knowledge for EC was acquired by most through medical texts thus highlighting the low coverage through media. Only 21% correctly knew about availability of EC at all government and private health facilities. A strikingly low 39.7% of the study population was aware that EC prevents unwanted pregnancy and only 22.89% could correctly identify the indications for its use. In spite of less knowledge 83.1% are willing to use it. Fear of failure was maximum among users. Conclusion: Most of the nursing officers were aware of the term EC but correct knowledge about its mechanism of action, indications and available drugs for EC was strikingly low.

[P5.5]

Experience Among PPIUCD Acceptors: Stepping Towards "Vision FP2020"

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Background: PPIUCD services in postpartum period was introduced as an integral part of the National Family Planning Program by Government of India since 2012. With introduction of JSY there has been increase in institutional deliveries

thereby making it easier and more feasible for government. **Aim:** To assess (a) Socio-demographic factors (b) Acceptance (c) Experience among PPIUCD acceptors at 6 weeks follow up. **Methods:** This study was performed on 180 postpartum IUD acceptors who attended post natal clinic of BJRM hospital during July to September 2017. These women had history postplacental or intra-caesarean insertion of CuT375 A. Data was collected using a structured questionnaire which included basic demographic information, questions related to acceptance, knowledge, satisfaction on PPIUCD insertion. Data analysis was done using percentage. **Results:** Among 180 PPIUCD acceptors, 53.3% patients were primipara, 68% were in 18-25 years of age group. Acceptance rate was more common in those who had completed their primary level of education (48%). Counselling via healthcare professionals improved acceptance rate upto 88%. Most of the insertions were (86%) were post placental. Overall satisfaction rate was 72% among acceptors. 78% women did not have any pain while 17% had mild discomfort during insertion. 77% women reported with no complication whereas abdominal pain and long thread were seen in 8.6% each and 3 acceptors reported with missing thread. 86% women were willing to continue with PPIUCD. **Conclusion:** As benefits outweighs its risk PPIUCD is effective and emerging method of contraception and has high acceptability among women after proper counseling.

[P5.6]

Incarcerated and Transmigrated Intrauterine contraceptive devices managed at a Tertiary care Hospital during 5 years- A Retrospective analysis

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Objectives: To find the incidence, risk factors and management of Incarcerated and Transmigrated Intrauterine contraceptive devices at a Tertiary care Hospital during past 5 years **Material and Methods:** A Retrospective Observational study was conducted on women, during past five years (Jan 2012 to Dec 2016) with complaint of absent or snapped strings with failed attempts at removal of IUCD by hook or curette and were posted for Hysteroscopy and Laparoscopy/ Laprotomy. **Results:** Total no. of IUCD insertions were 4557 and 71 (1.6%) women had Incarcerated or Transmigrated IUCD, out of which 63 (88.7%) were embedded and 8 (11.3%) were transmigrated. 35.2% presented with different Gynaecological complains and were not sure of missing String. Missing thread to Hospital reporting interval was more than one month in 28% and more than 6 months in 5.9%. Commonest site of transmigration was omentum, followed by UV fold /bladder. Hysteroscopic removal were 63 (88.7%), although in 19 (30%) women both hysterolaprosopy was done. 4 (5.6%) required Laprotomy and 2 (2.8%) needed cystoscopic removal. **Conclusion:** A regular follow up, adequate pre & post-insertion counselling and proper training of paramedical staff would help in early recognition of misplaced IUCD. Any transmigrated, malpositioned or embedded IUCD should be removed.

[P5.7]

Study of Exposure to Second Hand Smoke in Pregnant Women and its Impact on Pulmonary Function and Pregnancy Outcome

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Introduction: Adverse effects of exposure to second hand smoke during pregnancy are associated with decrease in pulmonary function, small for gestational age babies & preterm delivery. Aim of our study was to observe the pregnancy outcome & pulmonary function test in pregnant women exposed to second hand smoke (SHS) & in women not exposed to SHS. **Objectives:** (1). To observe pulmonary function test (PFT) in pregnant women exposed to second hand smoke & not exposed to SHS. (2) To observe the pregnancy outcome in both pregnant women exposed & not exposed to second hand smoke (SHS) like preterm delivery, caesarean section and small for gestational age (SGA) neonates. **Materials and Methods:** It is a hospital-based prospective case control observational study done at department of obstetrics & gynecology, UCMS & GTB hospital, Delhi from October 2015 to March 2017. Total 204 antenatal women between 6 to 28 weeks of pregnancy were recruited. Out of these, 82 women had exposure to SHS (second hand smoke) & 122 women had no exposure to SHS. Spirometry of these women were done & FEV1, FEV6 & FEV1/FEV6 ratios were obtained. These patients were followed up till delivery for pregnancy outcome. **Results:** PFT parameters, FEV1 & FEV6 were reduced in women exposed to SHS as compared to non-exposed women (84.1% vs 64.8% & 73.2 vs 62.3% respectively). Ratio of FEV1/FEV6 (<0.70) was significantly reduced in women exposed to SHS (p value 0.001). Incidence of preterm birth was significantly higher among women exposed to SHS (36.6%, p value 0.003). There was statistically significant difference in incidence of small for gestational age babies in women exposed to SHS as compared to women not exposed to SHS (28% vs 9.8%). **Conclusion:** The study concluded that pregnant women exposed to second hand smoke have many negative effects on their lung functions, pregnancy & newborn outcomes.

[P5.8]

Oocyte Quality and ICSI Outcome in Patients with History of Genital Tuberculosis

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Objective: To evaluate effects of tuberculosis on oocyte characteristics and effect on ICSI outcome **Design:** Prospective comparative observational study. **Materials and Methods:** Materials: Women undergoing ART (ICSI) *With h/o tuberculosis (1 clinical + 1 laboratory criteria) *Without h/o tuberculosis or tubal factor infertility Intervention: ART (ICSI). **Results:** No statistically significant difference with regards to age, FSH & LH levels, AFC and mean oocytes retrieved between the two groups. Mean AMH in cases and controls were 2.6 \pm 1.46 and 1.51 \pm 0.96 respectively [difference - statistically

significant]. days of stimulation in cases & control were 10, 10.4, [difference insignificant.] Retrieval rates of M2 oocytes in cases and controls were 33.3% and 93.3%, difference statistically significant. Comparison of other variants of oocytes and the fertilization rates (cases-72.0 \pm 29.0, controls-83.7 \pm 17.0) [no statistically significant difference]. Statistically significant difference between cases & controls when compared for number of grade A embryos (cases:85.7%, controls:93.1%). Clinical pregnancy rates in cases and controls were 14.3 % and 36.7% respectively, [difference- statistically insignificant]. But significant difference between ongoing pregnancy rates (cases: 3.6%, controls : 30.0%) seen. Only 1 case of ectopic gestation in control - incidence statistically insignificant. **Conclusions:** ICSI cycles in patient with positive history of genital tuberculosis were associated with low AMH values, lesser M2 retrieval rates, lesser grade A embryo formation rates and lesser ongoing pregnancy rates. limitations -small sample size.

[P5.9]

Changing Trends in Factors Responsible For Infertility

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Aim: To identify the changing trends in factors responsible for infertility. **Materials and Methods:** This is a retrospective observational study, conducted at Southend IVF Centre from April 2017 to Sep 2017. The data of 480 patients was analyzed and the patients were grouped according to their etiological factor. **Results:** Factors responsible for infertility were male factors 13%, female factors 60% & both partners were accountable in 30% while in 5% couples it was unexplained. In women POR (22%) was commonest cause for infertility followed by tubal blockage (21%) while ovulatory stands for 16% and unexplained were only 5%. This data is not at all comparable with earlier Indian studies where tubal disorders accounted for maximum contribution i.e. 37.5%, ovulatory disorders 20.6%, POR accounted for 16.8% and unexplained causes stood at 10% of the infertile cases. Studies from UK accounted for ovulatory factors as 7%, male 10%, tubal 9%, and unexplained for 12% of the infertile cases. **Conclusion:** The contribution of unexplained cases shows a downward trend probably because of better diagnostic modalities and more awareness. POR is on the rise because of the changing trends in lifestyles, late marriages and probably because of the late referrals to the advanced ART units. Identifying these rising risk factors may decrease the incidence of infertility. Also efforts are needed to raise awareness to maximize the results of ART with timely intervention.

[P5.10]

Sexual Behaviour Among Adolescents: A Hospital Based Study

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Aim: To know the prevalence of sexual activity, sexual behaviour and attitude towards sex among unmarried adolescent girls. **Materials & Methods:** It is a prospective observational study done in outpatient department over a period of one year. All

the unmarried adolescent girls (10-19 years) who were willing to participate in the study were included after taking informed consent. The participants were evaluated for their sexual behaviour with the help of a pre- designed, pre-structured and pre-tested questionnaire. **Results:** Out of the 320 adolescents presented to the OPD, only 165 consented to participate in the study. Prevalence of sexual activity was 16.9% (28/165) in the study. 4.8% (8/165) girls were pre-menarchal and were not having any knowledge of sex. Three girls were the victims of sexual exploitation. Around 64% girls were sexually active with their classmates. All the sexually active females were having intercourse through vaginal route; however non-vaginal route was also there in 6 girls. Home (11, 39%) was the most frequent place used followed by the hotel (10, 35.7%). Total 26% (43/165) girls were having knowledge of sex, among which 15 girls were not sexually active. **Conclusion:** Prevalence of sexual activity is low among Indians as compare to Western world but it may be a tip of iceberg as it is a hospital based study.

[P5.11]

A Comparative Study of Sublingual v/s Oral Misoprostol following Oral Mifepristone for Second Trimester Termination of Pregnancy

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Objectives: To assess the efficacy and safety of sublingual v/s oral misoprostol following oral mifepristone for second trimester termination of pregnancy. **Methods:** This hospital based comparative study was conducted on 220 women attending in the Department of Obstetrics and Gynecology, Zanana Hospital, S.M.S. medical collage jaipur for mid-trimester termination of pregnancy between 12-20 weeks with legal indication as per Govt. MTP act. After excluding the women as per exclusion criteria, they were randomly allocated into two groups (Group A/ Sublingual, Group B / Oral), the women received 200 mg oral mifepristone followed by sublingual or oral misoprostol 400 microgram three hourly for a maximum of 5 doses 48 hours later. **Results:** The mean Induction- abortion interval of Group A was 4.02 +/- 1.39 hours and Group B was 6.44+/- 1.79 hrs. Overall 62% cases had achieved successful abortion with two doses of misoprostol. The mean dose of misoprostol in Group A was 680+/- 220.4 microgram and in Group B was 1003.6+/- 274.9 micrograms. The acceptability was significantly more in Group B (100%) as compare to Group A (52.73%), probably because of unpleasant taste of sublingual misoprostol. **Conclusion:** Sublingual misoprostol when combined with mifepristone is effective for medical abortion in second trimester in term of efficacy, tolerability and success rate than oral route.

[P5.12]

Clinical Profile and Outcome of Genital Prolapse Cases: An observational study

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Objective: Uterine prolapse is a common problem among women in developing countries. It is known to cause physical and

psychosocial problems affecting the quality of life of patients. This study has been done to determine the risk factors, clinical features, management practices and post-surgery satisfaction in women with uterine prolapse. **Methods:** A total of 50 cases of uterine prolapse were interviewed who were admitted in tertiary care hospital from April 2017 to September 2017 (6 months). **Results & Conclusion:** Mean age at presentation of uterine prolapse was 46.5  13.5 years. Majority of cases were home makers (86%). Obstetric factors like parity  5 (30%), age at last pregnancy between 30-39 years (50%) and ˂ 30 years (42%), inadequate birth spacing ˂ 3 years (50%), home deliveries (84%), deliveries conducted by untrained personnel (88%), vaginal deliveries (100%), heavy work in post natal period (30%) were observed among cases. Most common associated complaint was difficulty in micturition (52%) and cystocele was found in 74%. Most common operative procedure done was vaginal hysterectomy with pelvic floor repair (82%). Conservative surgery was performed in 9 women (18%). On follow-up of 6 weeks, 64% of women had improved quality of life in terms of sexual, urinary and bowel habit. Public awareness regarding reduction in family size, institutional deliveries and adequate birth spacing are required as well as incorporation of physiotherapy exercise in both antenatal and postnatal period could play a role in lowering the incidence of this distressing disease.

[P6.1]

Cesarean Section Rate according to Robson's Classification

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Objective: To analyse cesarean section rates based on the Robson Ten-group classification. **Material & Methods:** Two hundred and fifty women underwent cesarean section from 1st August 2017 to 31st August 2017. The indications for cesarean section were classified according to the Robson Ten-group classification. The overall cesarean section rate, the relative size of each group with respect to total number of births and the contribution of each group to the overall cesarean section rate was calculated. **Results:** The overall cesarean section rate was 18.2%. The main contributor to the cesarean section rate were women with term pregnancy with previous cesarean section with fetus in cephalic presentation – Group 5 (N 65, 26 %). This was followed by multiparous women with term pregnancy with fetus in cephalic presentation in spontaneous labor – Group 5 (N 60, 24.8%). **Conclusion:** The Robson classification enables us to classify the cesarean sections in to different obstetric groups. Effective interventions can be initiated to modify the cesarean rates in a particular group, thereby decreasing the overall cesarean rate.

[P6.2]

Knowledge, Attitude and Practice Regarding Down's Syndrome and it's Screening in Antenatal Women

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Objective: To assess the existing knowledge and awareness about Down's syndrome and it's screening and attitude towards the awareness in patients in Lok Nayak Hospital,

Delhi. **Methodology:** A predesigned questionnaire was used to obtain information from antenatal patients. A total of 1000 patients attending the antenatal clinic were recruited and the result analyzed. **Result and Conclusion:** Present overall knowledge of Down's syndrome among antenatal patients was found to be poor and only 5% were aware. Of this, only 3% were aware of its association with low IQ and recognized the disease as a burden on the society. 5% were aware of ultrasound as a method of screening, 2.5% were aware of biochemical screening tests, and 1.5% were aware of invasive procedures as a method of diagnosis. The awareness was more among Hindus as compared to Muslims, Graduates compared to those who studied till secondary school, and middle socioeconomic group as compared to low socioeconomic group.

[P6.3]

Surgical Site Infections after Caesarean Section-Prevalence and Risk Factors

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Objective: Caesarean Section (CS) is one of the most commonly performed surgical procedure in Obstetric and Gynecology department. Surgical site infection (SSI) after a caesarean section increases maternal morbidity, prolongs hospital stay and medical costs. Globally, the CS rate is approximately 15%. This study to determine the prevalence, risk factors and micro-organisms responsible for surgical site infections and their antimicrobial sensitivity. **Methods:** A prospective observational study was conducted in department of Obstetrics and Gynecology, AIIMS from December 2013 to May 2015. A total of 300 women delivered by caesarean section were included in the study. Data was collected using structured proforma. Wound was evaluated for the development of SSI during hospital stay and up to 30 days after surgery. All women received antibiotic prophylaxis prior to surgery, women who developed SSI were investigated and antibiotics were changed depending on culture sensitivity. **Results:** Total of 300 cases were studied. The prevalence of surgical site infections was (16/300) 5.3%. SSI was superficial type in all patients, developed within 10 days of surgery in 87.5% women. 3/16(18%) of SSI were culture positive. The organisms isolated were pseudomonas aeruginosa, klebsiella pneumoniae and coagulase negative Staphylococcus. SSI was found to be common in women who were in labor before surgery (p 0.020), who had more than 3 vaginal examinations (p 0.03), women who had leaking per vaginam for more than 12 hours (p 0.02), women who had medical co-morbidities (p 0.01), women who had blood loss more than 250 ml during surgery (p 0.025) and required blood transfusion (p 0.02), also women who were vegetarian by diet (p 0.022). Although SSI was higher in obese group, this reached only borderline significance (0.065). **Conclusions:** SSI after caesarean section is a common problem. The risk of developing SSI after CS is multi-factorial and was found to be influenced by the following factors in this study: presence of labor, multiple vaginal examinations, leaking per vaginam, increased blood loss and presence of medical co-morbidities.

[P6.4]

The Episiotomy Related Pain in Breast Feeding and in Daily Activities on First Postnatal Day - The Woman's Preference- A pilot study

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Objective: There are no studies in postpartum women assessing the episiotomy pain and its relation to their preferred choice of position during breast feeding and routine activities. We did this study to assess pain on first postnatal day in women undergoing right mediolateral episiotomy and its relation with daily activities and breast feeding. **Methods:** The study was cross-sectional in design done at Safdarjung Hospital, New Delhi. The women on Post natal day one with right mediolateral episiotomy were recruited and analyzed for pain during breastfeeding and routine activities. VAS was used to assess the severity of pain. **Results:** Total of 43 women was included and mean age was 24yrs. Sitting cross legged position was the most preferred position for breast feeding. Mostly women were comfortable in lying supine (p<0.27) and walking (only 34% had pain) when it came to routine activities. The use of Indian toilets was more painful than western toilets (p<0.4) but former was used more because of hygienic reasons. **Conclusion:** Sitting cross legged is the preferred position in breastfeeding women and walking and lying down was comfortable routine activities.

[P6.5]

Retrospective Audit of Women Undergoing Second Trimester Medical Termination of Pregnancy for Congenital Abnormalities in Fetus in a Tertiary Care Hospital

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Objective: To evaluate prevalence of major congenital abnormalities & maternal demographics in women undergoing second trimester MTP. **Methods:** Retrospective Audit. January 2009 to October 2015. All antenatal patients with congenital abnormalities in fetus, detected on ultrasound and blood tests who underwent second trimester MTP were included. **Results:** Out of 6601 antenatal patients, 353 (5.34%) underwent first and second trimester medical termination of pregnancy. Out of 353 women, 104 (29.4%) women underwent second trimester MTP. 43(12%) cases of congenital abnormalities in fetus, were diagnosed on ultrasound and blood tests. The prevalence of congenital malformed fetuses undergoing second trimester MTP was 0.65%. Mean maternal age and gestational age at diagnosis was 27.5± 2 years and 17± 2 weeks respectively. 4.65% occurred in women above the age of 35 years. CNS and NTD were commonly diagnosed, followed multiple anomalies (syndromic) group. All women had an ultrasound examination done, however NT scan was done in 51.1% (22/43). Level 2 Anomaly scan was done in 74.4% (32/43) and an abnormal scan was found in 90.6% (29/32). Karyotype of fetus was done

in 14% (6/43). Autopsy examination uptake rate was 4.65% (2/43). **Conclusion:** Prevalence of major congenital anomalies 0.65%. Preponderance of CNS & NTD abnormalities. NT scans and screening tests uptake was low 51% and 32.5% respectively. 90% of the abnormalities were detected by Anomaly scan done between 17 to 20 weeks. Chromosomal analysis and autopsy percentage was very low.

[P6.6]

A Comparative Study of Modified WHO Partograph and Paperless Partograph in India by Using Feto-Maternal Outcomes in Primigravidas

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Objectives: Partograph evaluates progress of first stage of labour and is used to decrease maternal morbidity, mortality and prevent prolonged labour. This study compares 2 types of partographs which are used in obstetrics practice- The Modified WHO partograph and the paperless partograph. To compare modified WHO Partograph (MWP) and Paperless Partograph in the effective management of labour on the basis of • Labour crossing the Alert Line/ Alert estimated time of delivery (ETD) and action line/action ETD • Rate of caesarean section • Perinatal outcome • Maternal complications **Method:** The study was tertiary hospital-based prospective observational study. 200 primigravidas were allocated to two groups of 100 patients each in whom labour was monitored using either MWP or PP and fetomaternal outcomes analysed. **Results:** Mean age in the groups of MWP and PP were 23.56 and 23.47. Those monitored by MWP delivered earlier (4.1 ± 0.9 vs 4.51 ± 0.7 hrs, $p < 0.0001$). Those monitored using MWP more often received intervention as oxytocin or ARM (71% vs 53%, $p = 0.009$), but no difference in mode of delivery; and neonates had higher Apgar score at 1 minute (6.71 ± 1.47 vs 5.98 ± 1.27 , $p < 0.001$) but similar at 5 minute (8 ± 1.1 vs 7.76 ± 1.03 , $p = 0.112$) compared to PP. The MWP group had fewer maternal complications (9% vs 22%, $p = 0.011$) of which only PPH was independently lower ($p = 0.018$). MWP group had a higher rate of recorded inadequacy of contractions. **Conclusion:** This study shows better maternal and neonatal outcomes using the MWP. The former lead to lesser alert line-to-delivery interval, fewer maternal complications especially PPH, better Apgar scores and fewer NICU admission. Our findings strongly recommend the modified WHO partograph for monitoring instead of paperless partography.

[P6.7]

Routine Practice of Antenatal Folic Acid Supplementaion: Is it time yo review?

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Objective: Recently there have been recent reports linking high folic acid and low vitamin B 12 levels with adverse fetomaternal outcomes. This study is aimed to assess the serum folic acid and vitamin B12 status of pregnant women in the first trimester at the time of registration to see the trend in our population in view of the above hypothesis.

Methods: This is an observational study conducted in the department of Obstetrics and Gynaecology LHMC on 100 pregnant women attending the antenatal clinic in the first trimester of pregnancy. The exclusion criteria included malnourished women, women with moderate to severe anaemia. The serum Vitamin B12, Serum folate and homocysteine levels were assessed in all these women. **Results:** The median value of Vitamin B12 (pg/ml) and folic acid (ng/ml) was 207.5 (30-955.2) and 22.24 (1.77-45.40) respectively. Of all the subjects tested 50% were Vitamin B12 deficient whereas folic acid deficiency was seen only in 4% women. Significantly high levels of folate was seen in 38% women. 12% women had spontaneous abortion in the first trimester, out of which 50% were Vitamin B12 deficient, 8.3% were folate deficient and 8.3% had high serum folate levels. **Conclusion:** Vitamin B12 deficiency is common in antenatal women. 50% women had subnormal levels of Vitamin B12. Most of our women are folate replete with a significant number having higher than normal levels. As folic acid and vitamin B12 imbalance has been associated with adverse pregnancy outcomes such as miscarriage, GDM, macrosomia and abnormal in-utero programming of the fetus. It is time to review the routine practice of folic acid supplementation in first trimester of pregnancy.

[P6.8]

Knowledge and Determinants of Breast Feeding in a Tertiary Care Hospital

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Aims: 1. To assess the breastfeeding knowledge among booked and unbooked women delivering in tertiary care hospital. 2. To assess the determinants of late initiation of breast feeding. **Methodology:** Cross-sectional study in which 500 women were included. Women with medical disorders were excluded from the study. Closed ended structured questionnaire was used to collect data. Data pertaining to breastfeeding practices were asked in detail from mothers 24 hours after delivery. Related information regarding appropriate breastfeeding practices for example, initiation & frequency of breastfeeding, colostrum feeding, exclusive breastfeeding were collected and compared. **Results:** Late initiation of breast feeding was seen in around two third of the patients (n 500). Among them non exclusive breastfeeding and early cessation of breast feeding in prior pregnancy was also present. Unbooked status, low education status, false cultural beliefs are leading causes of non exclusive breast feeding, early cessation of breast feeding and pre lacteal feeds. **Conclusions:** Antenatal care, antenatal counselling, multiparity and educational status are important determinants for establishment of exclusive and successful breast feeding.

[P6.9]

Atypical Neurological Manifestation in Postpartum Period: A case series

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Case 1: A booked primigravida patient was admitted at 36week+5days of POG with B.P. 170/100mm Hg and urine albumin 1+. She did not have other features of impending eclampsia. Induction of labour was done and injection labetalol

was started for blood pressure control. Post vaginal delivery her B.P. remained normal but she complained of blurring of vision. There was spontaneous recovery within 48 hours and fundus examination was normal. On Postnatal day 4, she had monoparesis of left lower limb. Subsequently the next day she developed urinary incontinence. MRI spine showed mild neuritis / partial shear injury at L5-S1 level. CECT brain showed PRES syndrome and CSF examination was normal. Ultrasound was done to rule out deep vein thrombosis. Based on the clinical and radiological findings she received 5 days of Methylprednisolone pulse therapy followed by glycerol for 5 days. After 10 days, patient could walk with support and regained bladder continence. **Case 2:** Mrs. S, 32 year, old female P3L3 presented to gynae casualty on POD3 of EmlSCS done outside for non progress of labor with c/o weakness of lower limb progressing to upper limb and tachypnea. She developed complete quadriparesis with respiratory involvement two days later. CECT brain showed Atypical PRES syndrome and CSF study was normal. She received IV Immunoglobulin but had respiratory muscle paralysis and expired after 10 days.

[P6.10]

Breastfeeding -Prevent the preventable

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Objective: To assess knowledge, attitude and practice of breastfeeding among Indian postnatal mothers. **Method:** It is a cross sectional study done on randomly selected postnatal mothers in Dept. of Obstetrics and Gynaecology in BJRH using face to face interview with a structured questionnaire. This is an ongoing study and final results will be presented in the conference. **Results:** Majority of subjects studied upto primary school, were housewives and had delivered vaginally. All considered BF as best nutrition for baby. Most subjects knew that exclusive BF should be done for 6 months(94%); colostrum is good (95%); BF protects from diseases and helps in growth of baby(81%) and should be initiated within an hour of delivery(84%). 70% subjects did not know BF to be a natural contraceptive. Majority knew about weaning(97%);feeding on demand(58.5%). 92% subjects practiced burping and 17% gave prelacteal feeds. BF was discontinued when mothers were sick(45%); menstruating(24%); baby's sick (24%). 90% subjects think BF decreases family expenses. 28% do not breastfeed in public places while 15% consider that BF interferes with sex. 95% subjects prefer sitting on a chair in a cross cradle position (82%). Only 24% practice correct technique of BF and 35% follow breast to baby method. **Conclusion:** Good knowledge and attitude but poor skills of BF. Good antenatal counselling is to be done and BF practices need to be strengthened.

[P6.11]

Analysis of Cesarean Deliveries in a Tertiary Care Centre using Modified Robsons Ten Group Classification System

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Aims: To analyze all the cesareans in the last two years

according to the Modified Robsons Ten Group Classification System. **Materials and Methods:** All cesareans done from 1st September 2015 to 31st August, 2017 in HAHC hospital, HIMSR were included in the study. Their parity, period of gestation, induction if any and the indication of cesarean was noted down in a predesigned performa. All of them were further classified as per the Modified Ten Group Classification System. **Results:** From 1st September 2015 to 31st Aug 2017 there were 2940 deliveries with complete records. Out of these there were 906 cesareans contributing to 30.82% of the deliveries. Out of the 906 cesareans, 327(36%) were primigravidas and 314(35%) were those with previous cesareans. Thus these two groups were contributing maximum to the cesarean deliveries (71%). Among the 36% primigravidas only 2% were elective cesareans, 20% were those who had come in spontaneous labour and 16% were induced. Among the 35% women with previous cesareans 22% were those who were for elective repeat cesarean, 9% were those who were in spontaneous labour attempting TOLAC and 4% were those who were induced. On comparing 2015-2016 and 2016-2017, a higher rate of cesarian was found in 2015-16 (33.6%) compared to 2016-17(27.6%). After analysis of these patterns, multiple level interventions were taken in the department to curtail cesareans. There were revised departmental protocols regarding indications of inductions, methods of inductions, duration of trial of labour etc. This showed a cesarean rates of 24.19% in Sept 17 and 23.4% in Oct 2017. The study and interventions are still continuing. **Conclusion:** The rates of cesarean deliveries in modern day obstetrics are high in comparison to those stated to be safe as per WHO. Interventions are required in Robsons group I, IIA and in Group VA,VB and some cases of VC to bring down the cesarean rates. This analysis ensures a uniform comparison in between different institutes as well as different time frames and therefore in reducing cesareans.

[P6.12]

Screening for Intimate Partner Violence During Pregnancy: An opportunity not to be missed

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Intimate partner violence (IPV) is defined as an actual or threatened abuse by an intimate partner that may be physical, sexual, psychological or emotional in nature. Research shows that pregnancy doesn't prevent the occurrence of IPV, but conflicting evidence exists about whether IPV increases or decreases during pregnancy. The true prevalence of IPV is unknown because many victims are afraid to disclose their personal experience of violence. **Objective:** To know the prevalence of violence against women during pregnancy by an intimate partner. **Method:** The prospective study was done in Lady Hardinge Medical College. A questionnaire was prepared taking into consideration the various tools available for screening IPV. 100 pregnant women presenting to ANC OPD for regular check up were screened under full privacy. Data were collected and results were analyzed. **Results & Conclusions:** One-third of women experienced some form of violence during current pregnancy. All of them reported psychological and mental torture and 8% of them reported

physical abuse. Other 9% of women had experienced physical violence before this pregnancy, which ceased during this pregnancy. 3 women had tried to harm self and 2 thought of it. Pregnancy IPV is a significant problem worldwide. It is associated with adverse newborn and maternal outcomes. Obstetricians are in a unique position to address the problem and provide screening and clinical interventions to improve health outcome.

[P6.13]

Role of hysteroscopy in the evaluation of AUB patients and its histopathological correlation

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Objective: To assess the efficacy of hysteroscopy in identifying abnormal findings in patients presented with abnormal uterine bleeding and to correlate the hysteroscopic with the histological findings.

Methods: A prospective study carried out in the Department of Obstetrics and Gynecology at HAHC Hospital from Nov '16 to June'17. 100 patients presented with AUB were selected for the study. Patients more than 35 years of age group presented with AUB were recruited from the gynae OPD after written informed consent. Total 100 patients were enrolled. After complete work up patients were subjected to hysteroscopy and guided endometrial biopsy and endometrium was sent for histopathologic examination. The correlation between findings on hysteroscopy and histopathologic examination was tabulated.

Results: AUB was most common between 35-40 years of age group (44.23%). Most common presenting complaint was menorrhagia (48%). Maximum patients were presenting between 4-6 months of their complaints. Most common abnormality detected by hysteroscopy was endometrial polyp (22%) followed by endometrial hyperplasia (21%). In 21% of patients of endometrial hyperplasia, on histopathology in only 10 % of the cases hyperplasia was present. Endometrial carcinoma was suspected in only 1 case on hysteroscopy but in 5 cases it was diagnosed on histopathology.

Conclusion: Hysteroscopy provides a more accurate and specific diagnosis in patients with abnormal uterine bleeding with space occupying lesions only. In AUB patients without any space occupying lesion endometrial aspiration remains the first line of management.

Keywords: Hysteroscopy, dilatation and curettage, menorrhagia

[P7.1]

Transitional Cell Carcinoma of Ovary: A rare case report

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Introduction: Transitional cell carcinoma of the ovary is a rare subtype of ovarian malignancies. It resembles urothelium rather than ovarian epithelium.

Case Presentation: A 60 year old P10L6 postmenopausal

woman presented with postmenopausal bleeding, significant weight loss and vaginal discharge since one month. She was a diagnosed hypertensive and diabetic on treatment. Sonography showed a large pelvic mass of 11x7 cm on the right side with thin endometrium and minimal ascites. Endometrial aspiration was reported as atrophic. MRI features were suggestive of serous cystadenocarcinoma with no lymphadenopathy. CA-125 was 1260 u/ml. A large right sided pelvic mass was palpated on examination. Patient was taken up for staging laparotomy with total abdominal hysterectomy with bilateral salpingo-oophorectomy and infracolic omentectomy. Histopathology report was consistent with malignant transitional cell carcinoma and cytopathology positive for malignant cells. Patient received carboplatin and paclitaxel based chemotherapy for three cycles.

Conclusion: Transitional cell carcinoma is a rare type of epithelial ovarian carcinoma. Surgical resection is the primary therapeutic approach and chemo sensitivity is better than other types of ovarian carcinoma.

Key words: transitional cell carcinoma, ovarian malignancy

[P7.2]

Squamous Cell Carcinoma in Mature Cystic Teratoma of Ovary in Post Menopausal Female- A rare case report

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Introduction: Mature cystic teratoma is the most common germ cell tumour mostly seen in reproductive age group. Squamous cell carcinoma is the most common malignancy in these tumours. It is rarely found in post menopausal women with 1-2% risk of malignant transformation.

Case: A 49 year old P1L0 post menopausal lady with complaints of abdominal distension for 2 years and pain in lower abdomen for 2 months. On examination, an abdominal mass of 34 weeks gravid uterus size with side to side mobility, variegated consistency and irregular margins was found which on per vaginum examination was separate from uterus. USG revealed a large left adnexal neoplasm, CECT was suggestive of immature teratoma of the left ovary. CA 125 was elevated (266IU/ml). Patient underwent staging laparotomy where intraoperatively bilateral dermoid cysts with omental and peritoneal nodules in the Pouch of Douglas were found. Peritoneal washings followed by total abdominal hysterectomy, bilateral salpingo-oophorectomy, omentectomy and peritoneal biopsies was done. Left ovarian cyst was 20*15*12cm with cut section showing caseous material with calcifications and hair. Histopathology showed squamous cell carcinoma arising in mature teratoma with omental and peritoneal metastasis making her stage 3b. Patient has received 3 cycles of adjuvant chemotherapy with carboplatin and paclitaxel.

Discussion: A large mature cystic teratoma of ovary rarely presents in post menopausal lady. It has a low risk of malignant transformation most common being squamous cell carcinoma. It is associated with poor prognosis especially when presenting with metastasis. Surgery and adjuvant chemotherapy is the treatment of choice.

[P7.3]

Juvenile Granulosa Cell Tumor (JGCT) of Ovary in a Young Woman - Report of a rare case and review of literature

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Introduction: Granulosa cell tumors of ovary are sex cord stromal tumors comprising 2% of all ovarian neoplasms. It can be adult (95%) or juvenile (5%) based on histology. These are estrogen secreting tumors.

Case Report: A 24years old P1L1 lady presented with complains of abdominal pain, lump abdomen with continuous bleeding per vaginum since 1 month. Her ultrasonography and CECT were suggestive of ovarian carcinoma but her tumor markers were marginally raised. FNAC was equivocal. Her staging laparotomy was performed and left salpingo-oophorectomy was done and sent for frozen section, reported as granulosa cell tumor. Peritoneal fluid cytology and omentectomy was also done.

Conclusion: Final HPE showed Juvenile granulosa cell tumor of ovary with high mitotic index (>4/hpf) with large tumor size (20 x18 x 9 cm) and tumor cells positive for calretinin and inhibin. JGCT are rare tumors and occurs in prepubertal girls and young women with mean age at diagnosis 13years. Surgery is the primary treatment. This patient is a young woman so fertility sparing surgery was performed as recommended in this age group. Nodal dissection is not recommended. This was stage 1c tumor with associated poor prognostic factors that is large tumor size and high mitotic index so postoperative chemotherapy can be considered but there is a debatable role of the same. Also, as they have a high chance of recurrence, this patient will need a long term follow up. Due to rare incidence of this tumor and literature, knowledge regarding its optimal management is limited.

[P7.4]

Benign Multicystic Peritoneal Mesothelioma: A rare tumor of the abdomen

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Introduction: Benign multicystic peritoneal mesothelioma (BMPM) is a rare cystic mesothelial lesion. We reported a case of 21 year old married, female with Primary infertility with complaints of pain abdomen off and on since 2 yrs. On examination, Palpable painful huge cystic mass upto umbilicus around 20 weeks size was felt. TVS shows large multiseptated cystic lesion occupying the entire lower abdomen, pelvis, overlying the uterus displacing the bowel loops, ovaries? ovarian cystadenoma. PET CT demonstrated a large multi septate cystic lesion, 10.5 x 20.1 x 22.3 cm involving entire pelvis and abdominal cavity reaching superiorly till subhepatic region, displacing rectum posteriorly and rest of the bowel loops superiorly, encasing the uterus from all sides, reaching laterally upto pelvic side walls, anteriorly reaching upto anterior abdominal wall, encasing bilateral ovaries which show heterogeneous enhancement,

cystic areas and patchy increased Fdg uptake. CA 125-20.10. She underwent Exploratory laparotomy, en bloc resection of tumour and total omentectomy with excision of multiple cystic peritoneal lesions. **RESULTS:** Intraoperative findings- Small, multiple friable, thin walled cystic lesions surrounding ovaries, uterus, bladder and peritoneal walls. Frozen section- Non malignant provisionally omental peritoneal inclusion cysts. Histopathological examination -Omental mass studded with multiple cysts, filled with serous fluid. Immunohistochemical analysis- Positive expression of Calretinin and CK5/6

Conclusion: BMPM is a rare lesion, not associated with specific complaints, objective signs or unique appearance on imaging studies. Preoperative diagnosis is difficult, and final diagnosis always requires pathological analysis. En bloc removal of BMPM is the ideal treatment strategy, and malignant transformation is rare.

[P7.5]

Ovarian Edema- A pseudotumor

Roopal

G.M.C, Haldwani, Nainital

Objective: Ovarian edema is benign enlargement of ovary. It needs conservative treatment.

Methods: Two cases were reported in which ultrasound suggestive of huge ovarian enlargement.

Results: Histopathology report suggestive of ovarian edema. Cytology was negative for malignant cells.

Conclusion: The role of intraoperative frozen section needs to be emphasized, which can guide a clinician to perform fertility sparing surgeries.

[P7.6]

Hemoperitoneum In Leiomyoma Uterus: A rare case report

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AIMS: Leiomyoma are the most common benign tumour of female genital tract. Mostly these present with menstrual irregularities, infertility, abortions, pain and pressure symptoms. Leiomyoma can present atypically with acute abdomen, haemorrhage and hemoperitoneum. We are reporting one such rare case in perimenopausal women.

Methods: 43year old lady presented with chief complaints of severe pain in abdomen and vomiting since 4days. Patient was clinically pale and vitally stable. On P/A examination, a midline tender firm mass of 24weeks size was palpable with restricted mobility. On P/V examination, uterus was not felt separate from the mass which was enlarged to 24weeks uterine size and fullness was present all through the fornices. Hemoglobin was 4gm%. It was diagnosed on ultrasound and MRI as a large subserous fibroid of 15x14cm arising from the fundus of the uterus with gross fluid in peritoneum. Laprotomy confirmed the findings and total hysterectomy was done along with evacuation of 2500cc hemoperitoneum.

Results and Conclusion: This is an interesting, rare but possible fatal complication of large leiomyoma. Only 100 cases have been reported in literature so far. In large leiomyoma, there

is increased diameter of arteries and increased vascularity. Spontaneous bleeding is likely to occur from torn enlarged veins coursing over surface of subserous leiomyoma resulting in acute abdomen, hemoperitoneum and hypovolemic shock. It is a rare atypical fatal complication in large leiomyomas and should be kept as differential diagnosis and treated as an emergency like in our case, patient underwent emergency laparotomy.

[P7.7]

Adenoid Cystic Carcinoma of Cervix – A rare variant of carcinoma cervix

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Introduction: ACC is generally a locally aggressive tumor and has a high tendency for local recurrence and distant metastasis. It is a malignant epithelial neoplasm with a distinctive histological appearance accounting for less than 1% of all cervical carcinomas.

Case Summary: A forty six year old postmenopausal female presented in the out patient department with history of postmenopausal bleeding PV. On per speculum examination vaginal examination there was a 3 x 3 cms fungating growth arising from the cervix, involving the proximal vagina. On per-vaginal examination a hard growth noted arising from cervix-which bleeds on touch. Per-rectal examination revealed the parametrium to be free but involvement of uterosacrals noted. A clinical diagnosis of carcinoma cervix stage 2B was made. Biopsy of the growth revealed it to be adenoid cystic carcinoma cervix. The patient has been referred to radiotherapy department.

Conclusion: ACC of the cervix is a rare, particularly aggressive neoplasm. It requires enhancement of postoperative treatment regimens and careful follow-up and thus needs to be distinguished from other tumors with similar histologic aspects.

[P7.8]

Borderline Ovarian Tumor in Unmarried Girl: A rare entity

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23 years unmarried girl presented to the Gynae OPD with C/O pain in right iliac fossa and weight loss since two months. On per abdomen examination- A 15x10 cm abdomino-pelvic mass, cystic in consistency with restricted mobility non-tender with smooth surface and slightly irregular margins, was felt. On P/R- two separate masses one approx 10x8 cm felt in the left adnexal region, another mass 5x5 cm approx felt in the right adnexa restricted mobility, non-tender cystic in consistency felt. Uterus was normal size. Rectal mucosa free. On investigation Tumour markers-CA 125-- 130 U/ml was raised. On MRI Abdomen and Pelvis-Bilateral adnexa showed large encapsulated multiloculated solid, cystic masses closely abutting each other. Solid components were seen as papillary projections along the septae and walls of locules. Contents were hypointense on T2WI and isointense on T1WI. Scanty, compressed ovarian parenchyma was seen along periphery of both masses Fertility sparing surgery that is bilateral ovarian cystectomy with preservation of normal ovarian tissue was done. Histopathology of Right side ovarian cyst revealed mucinous borderline tumor.

Left side ovarian cyst report was benign mucinous cystadenoma. Omental biopsy showed noninvasive implants. After 6 weeks of follow up CA125 was 50U/ml and after 12 weeks CA 125: 22 U/ml. Follow up Ultrasound & MRI Abdomen and Pelvis done at 12 weeks were normal. Recurrence is high during first 2 post op years, so cases of BOT should be followed up till 2 years. Rate of recurrence of BOT is 7% after fertility sparing surgery group. Most common site of recurrence is remaining Ovary. Recurrence after BOT is mostly BOT only. Spontaneous pregnancy rate of 32-65% has been reported in BOT treated with fertility sparing surgery with a mean duration 15 months.

[P7.9]

Averting Surgery in A Rare Case of Interstitial Heterotopic Pregnancy After Art: A Case- Report

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Objective: Interstitial heterotopic pregnancy is a rare life-threatening condition due to the torrential bleeding in case of rupture. Most clinicians face the management dilemma as no standard management exists.

Case: A 30 year old obese women married for 5 years presented with primary infertility. She had a history of genital tuberculosis 4 years back, completed the course of anti-tubercular therapy. HSG revealed bilateral cornual block and septate uterus for which laparo-hysteroscopy was undertaken. Septal incision was done hysteroscopically and both the tubes and ovaries were not visualized due to the dense adhesions in the pelvis. She was referred after one failed IVF. Bilateral hysteroscopic tubal occlusion was done in view of visible hydrosalpinx on ultrasound. She underwent an IVF cycle and a frozen embryo replacement at our centre. At 5 weeks of amenorrhea, we did a trans-vaginal scan, on which interstitial heterotopic pregnancy was diagnosed corresponding to 5 weeks. So TVS guided aspiration and instillation of saline into the interstitial sac was performed. Later she was followed up clinically and with ultrasounds. But unfortunately, her intrauterine pregnancy did not grow and she had missed abortion.

Conclusion: Interstitial heterotopic pregnancy creates utmost confusion among clinicians due to the non-existence of management guidelines. High index of suspicion for ectopic pregnancy to be kept in ART. Different case reports have been published with the variable management. We managed to avoid a difficult laparoscopic surgery in view of frozen pelvis and interstitial pregnancy and tried to salvage the intrauterine pregnancy by avoiding embryo-toxic agents.

[P7.10]

Prolonged use of Centchroman: Can it cause Uterine Sarcoma?

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Introduction: Centchroman (Ormeloxifene) is a synthetic non-steroidal compound used as an oral contraceptive. It is currently under trial for treatment of breast cancer and postmenopausal

osteoporosis. Centchroman has been reported to induce only minimal side effects and no hormonal imbalance.

Case: A 35 year old P2L2, presented with abdominal lump and associated pain since 3 months. She was taking "Saheli" for contraception continuously for 4 years. On examination a uterine mass corresponding to 24 weeks was present. Ultrasound and CECT suggested markedly enlarged globular uterus with multiple necrotic areas diffusely scattered in anterior and posterior myometrium with ET- 8mm. Hysteroscopic directed endometrial biopsy was reported as Endometrial stromal cell sarcoma. Saheli was stopped and patient presented after 1 month with the HPE report. On repeat examination the uterine size had decreased to 18 weeks. Staging laparotomy with TAH+ BSO with pelvic lymph node sampling was done. Intraoperatively- uterus was uniformly enlarged, 16x 10 cm with cut section showing multiple degenerated area bulging into endometrial cavity with yellow hue on cut section. Final HPE report came as Endometrial stromal sarcoma stage 1b. This case highlights a possible rare association of Centchroman with Uterine sarcoma.

Conclusion: Lengthy intake of centchroman requires medical surveillance and long-term studies are needed.

[P8.1]

Laparoscopic Management of Acute Abdomen in Pregnancy

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Deepa Maheshwari, Aamir I Lone**
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Objective: Laparoscopic management of acute pain abdomen in pregnancy.

Methods: 32 years old lady. Married life - 8 years. Took infertility treatment, IVF (ET done in July 16) presented with severe pain lower abdomen and bleeding per vaginum. USG was done which showed heterotrophic pregnancy with right adnexal torsion. Patient underwent Laparoscopy. per op. findings- were haemoperitoneum present. Both ovaries look hyperstimulated right ovary multilobulated enlarged. Right adnexal torsion present (4-5 times). Right adnexal detorsion done gently with blunt-tipped graspers. Right sided tubal abortion was present. Ectopic tissue removed with blunt forceps and sent for HPE. Received tocolytics and antibiotics. Operative and post operative period was uneventful.

Result: Patient was discharged after 24 hrs in stable condition on tocolytics. Pregnancy continued till 35.1 weeks and underwent caesarean section (indication: decreased fetal movement with non reassuring CTG) male baby 3.09 kg delivered. Cried immediately. Mother and baby discharged from hospital in stable condition after 72 hours.

Conclusion: Laproscopic management is the gold standard for management of pregnancy with acute abdomen. It has no ill effect on fetus, has minimal blood loss, less post operative infection, minimal hospital stay if done in expert hands.

[P8.2]

Management of Pregnancy in a Women with Osteogenesis Imperfecta: Disease effect on previous cesarean scar

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Objective: To study pregnancy and neonatal outcome in a rare genetic disorder: osteogenesis imperfecta.

Method: A 30 year old female, G4P2L1A1 and a known case of mild type of osteogenesis imperfecta, was admitted at 32 week of gestation for safe confinement. She had history of multiple fractures since childhood, had blue sclera with mild scoliosis. She had one full term emergency cesarean section in 2012. In second pregnancy, she had emergency exploratory laparotomy in view of scar rupture and intra-uterine death in 2014. She was diagnosed with osteogenesis imperfecta in post-partum period. She was admitted and investigated. ECG, Chest X ray, Echocardiography revealed no abnormality. Genetic counselling was done, steroid cover was given. Ceasarean section was done at 34 weeks, revealing complete scar dehiscence, alive baby with birth weight 2.3 kg and APGAR score 9,9,9 was delivered. Baby was evaluated for the disease, he also had blue sclera, radiological findings were normal.

Result: Management of such patients should be carried out in a tertiary care centre . Prenatal diagnosis using biochemical and molecular approaches are now available. Mode of delivery can be individualized, cesarean section is advocated for fetal and obstetric indication.

Conclusion: Multidisciplinary approach should be used for managing these patients. Genetic counselling should be done before conception. Mode of delivery should be individualized.

[P8.3]

Hypergammaglobulinemic Purpura of Waldenstrom(HGPW) in Pregnancy- A rare case report

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Background: Hypergammaglobulinemic Purpura Of Waldenstrom (HGPW) is a rare clinical entity and its presentation in pregnancy has very few case reports available. It is generally an idiopathic phenomenon but may sometimes be associated with autoimmune diseases presenting in mostly women of reproductive age. It is characterized by recurrent crops of non thrombocytopenic purpura, hypergammaglobulinemia, mild anemia, raised ESR and circulating immune complexes. It can flare up in pregnancy and can have manifestation of intrauterine growth retardation, pre eclampsia, intrauterine death, heart block partial or complete in the fetus.

Case Report: A 22 year unbooked primigravida attended ANC of PGIMER and DR RML Hospital on 03/11/2016 at 24 weeks of gestation with non pruritic rash over lower limbs and abdomen. Blood investigations revealed anemia, raised ESR, positive ANA ds DNA, anti Ro antibody and increased gamma globulins. Skin biopsy was reported as leukocytoclastic vasculitis. There was an

ultrasound evidence of mild IUGR and first degree heart block in the fetus. Patient was managed with oral hydroxychloroquin and low dose aspirin. Patient was under close monitoring and underwent LSCS in labour for fetal distress. Baby was healthy with no evidence of neonatal lupus or CHB. Patient was discharged and had gradual remission within 4-6 weeks.

Conclusion: Awareness of this rare, relatively benign entity which can flare up in pregnancy is required as it can have adverse sequel in mother and child. A multidisciplinary approach with dermatologist, rheumatologist, fetal medicine and pediatric cardiologist is required in managing rare auto immune disorders of this type.

[P8.4]

DJ Stenting for Acute Severe Hydronephrosis and Urinoma in an Undiagnosed Congenital Puj Obstruction in Pregnancy

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Abstract: Objectives: Management of acute severe hydronephrosis with urinoma and undiagnosed congenital PUJ obstruction in pregnancy. **Methods-** 31 year old lady, primigravida with 18 weeks 01 day pregnancy by date presented with severe pain abdomen in left flank area for 6 hrs associated with bilious vomiting and inability to pass flatus. Radiological imaging was done which showed left sided pelviureteric junction obstruction with marked hydronephrosis with cortical thinning and left perinephric and pararenal space fluid collection suggestive of urinoma. In concurrent consultation with urologist patient underwent left DJ stenting under USG guidance, under general anaesthesia. Received antibiotics, analgesics. Peroperative and postoperative period was uneventful.

Results: Patient was discharged after 72 hrs in stable condition on progesterone support. Patient is regularly followed with USG KUB for stent placement, urine culture and sensitivity, TLC, and CRP. Pregnancy is uneventful till date. **Conclusion-** Double-J-ureteral stenting is an effective, simple and safe method in treating symptomatic hydronephrosis during pregnancy.

[P8.5]

A Rare Case Report of Cesarean Scar Pregnancy

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Cesarean scar pregnancy is the rarest form of ectopic pregnancy implanted within the scar of previous cesarean delivery. Though uncommon, it can be life threatening due to high incidence of uterine rupture and massive hemorrhage. The secondary rise of repeat cesarean delivery in the western world has been associated with an increase in complications of placentation in subsequent pregnancies, e.g., placenta accreta and its subtypes. Embryo implantation in a previous cesarean scar (CS) resulting in a cesarean scar pregnancy (CSP) is another rare but potentially catastrophic complication. Pregnancy developing within the fibrous tissue of

a cesarean section scar is the rarest form of ectopic pregnancy. Although it is uncommon, this iatrogenic condition can be life-threatening because of the very high risk of complications such as uterine rupture and massive hemorrhage. Recent data has shown an increasing trend towards cesarean section rates and hence increasing rates of cesarean scar pregnancy. With high index of suspicion and liberal use of TVS, the condition is being diagnosed early in pregnancy, further allowing for timely intervention and fertility preservation. We are reporting here a case of G3P2L2 with previous 2 cesarean deliveries diagnosed as cesarean scar ectopic pregnancies on ultrasound.

Method: A 32yr old, multigravidae presented in obstetrical emergency with pregnancy corresponding to 8w2d with spotting per vagina since 1 day with USG showing implantation in the previous cesarean scar. Her vitals were unstable with BP-90/60mmHg and PR-130b/min. Abdomen was tense and tender with guarding and rigidity present. Patient was then taken for emergency laprotomy. Intraoperatively, previous scar was found to be thinned out with only the serosal layer seen to be covering the fetal tissues implanted in the previous scar, confirmed by histopathological examination. Hysterotomy was done and uterine cavity emptied, uterus closed in layers with foley's bulb in situ so as to drain out any collections in the cavity.

Result & Conclusion: With an increased rate of cesarean section and use of IVF, we can expect an increased number of cesarean scar ectopic pregnancies. The women at risk of CSP are appear to be those with history of placental pathology, ectopic pregnancy, multiple cesarean sections and cesarean breech delivery. Treatment standards are lacking, but several options are available. Fertility preserving options include local or systemic methotrexate either alone or in combination with conservative surgery in a hemodynamically stable patient. Isthmic resection with double layer closure can be performed laproscopically, robotically or open. In most cases, uterus can be preserved, although hysterectomy is also acceptable and sometimes necessary option in heavy uncontrolled bleeding. Often uterine artery embolisation is done postoperatively to minimize hemorrhage risk. Medical therapy is effective because it is less invasive than surgery, it should be considered prior to surgery if patient is vitally stable. Heightened awareness of this possibility and early diagnosis by transvaginal sonography can improve outcome and minimize the need for emergency extended surgery.

[P8.6]

Pemphigoid Gestationis: A rare case

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Pemphigoid gestationis is a rare, autoimmune blistering dermatosis. It occurs in 1 in 50,000 pregnancies. The predominant symptom is pruritis. The aim of this communication is to increase awareness among clinicians regarding this rare disorder. A 25 yr old normotensive G3P1L1A1 with one term vaginal delivery 3.5 yrs back and one 3month spontaneous abortion 1.5 yrs back presented in antenatal OPD at 33 wks of gestation with bullous pruritic lesions that started in the periumbilical region 15 days back and later on spread to involve the whole of the body. Patient didn't took any treatment except for some topical application from local doctor. She was referred to skin department and was misdiagnosed as a case of chicken pox and later on got admitted

after 2 days as a case of pemphigoid gestationis in active stage and was started on systemic steroids. The dose of prednisolone was tapered and she was discharged on optimal maintenance dose. She was again admitted at 37 wks from antenatal OPD in view of pemphigoid gestationis with intra hepatic cholestasis of pregnancy. She was induced in view of IHCP and delivered a health male baby of 2.9 kg birth weight with no skin lesions. She developed flare up on postpartum day 2 and was again started on systemic steroids and was discharged on day 8.]To conclude a multidisciplinary approach is required for diagnosis, treatment and course of the disease from both dermatologist and gynaecologist view point.

[P8.7]

Title Case - Metoclopramide Induced Extrapyramidal Side Effects– A case report|

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Introduction: The incidence of extrapyramidal side effects associated with metoclopramide has been reported to be approximately 0.2% with female predominance. This case report presents the frequent occurrence of metoclopramide - induced oculogyric crisis and movement disorders with oral dose.

Case Report: A 30 year old P5L2 post natal in patient was prescribed oral metoclopramide for decrease milk secretion. She developed abnormal facial movements with upward rolling of eye ball on postpartum day 21 after intake of 3 doses i.e. 30 mg of metoclopramide within 24-36 hours. On examination, the patient's pulse rate was 86/min, Blood Pressure was 110/68 mm of Hg, Respiratory rate was 20/min, Spo2 - 98%. Her face was found deviated towards left side along with upward rolling of eye ball and neck rigidity. While patient's serum electrolyte and other investigations were normal. Because of these symptoms urgent neurology consultation was done. Metoclopramide was discontinued, injection phenargan 25 mg intramuscular, tablet calcium 1000 mg were given. After conservative management patient became symptomatically better.

Conclusion :The Side effects are mainly due to intravenous administration of metoclopramide. These complications are associated in postoperative patient as drug is used as prokinetic, antiemetic. Acute dystonic reactions are the most frequent extrapyramidal side effects from metoclopramide and typically occur within 24-48hr of initiating treatment.

[P8.8]

Successive Vaginal Birth After Caesarean Section: An increasing possibility

Mayuri Ahuja

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Abstract: Vaginal birth after one caesarean section (VBAC) should be encouraged to decrease the rising trend of overall caesarean section rate. VBAC results in overall lesser maternal

and neonatal morbidity, lesser hospital stays resulting in lesser economic burden to the country. In recent years there has been a reported decline in the incidence of VBAC due to dreaded complication of uterine rupture and associated professional liability. Presently we document a case of previous lower segment caesarean section conducted seven years ago followed by four successive uneventful VBAC. Many factors predict the success of VBAC, but past history of VBAC is one of the most powerful predictors as highlighted in the study done by Sinha et al in 2017, and the rate of VBAC in India varies from institution to institution. The studies pertaining to the maximum number of VBAC are sparse in number. Hence, further reporting of cases should be encouraged in order to impart better family planning services.

[P8.9]

Intestinal Obstruction in Pregnancy: An unusual presentation

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Introduction: Intestinal obstruction is a serious complication that may rarely be seen in pregnancy, resulting in maternal and fetal mortality. The causes of intestinal obstruction in pregnancy include adhesions, volvulus, intussusception, carcinoma, hernia and acute appendicitis. We are presenting a case with a very unusual aetiology for intestinal obstruction,

Case Summary: A, 24 years old pregnant lady G₃P₂L₀ with 31 weeks POG, presented with acute onset abdominal pain, distention and vomitings for two days. She was dehydrated and had tachycardia& tachypnea. Abdomen was grossly distended and uterus couldn't be palpated. Cervical os was closed and uneffaced and presenting part was high up. USG revealed a 32 weeks fetus with severe oligohydramnios and fetal bradycardia. There was e/o a large fluid filled structure noted in right hypochondrium reaching upto right iliac fossa with dense floating bowel loops s/o intestinal obstruction.

Emergency laparotomy was done. After removing grossly distended gut loops, LSCS was performed. Then it was found that stomach and duodenum were grossly distended. Proximal one- third of jejunum was within a sac like structure formed by an anomaly of the mesentery of transverse colon. The distal edge of this sac was formed by superior mesenteric vessels acting as the constriction ring above which the small bowel was trapped. The sac was opened and content was reduced. Hernial orifice was closed and gastrostomy with appendectomy was performed. Patient was discharged on 17th day. After 4 weeks of surgery, gastrostomy closure was performed. Patient has been followed up for 6 months and is doing well.

Discussion and Conclusions: Bowel obstruction in pregnancy is rare and 50% cases are due to adhesions. Internal herniation is a very rare cause, seen in < 1% of cases of intestinal obstruction in pregnancy. Presenting symptoms of nausea, vomiting, abdominal pain and constipation are easily mistaken for some of common symptoms in pregnancy. Aggressive intervention are required to decrease the morbidity and mortality of this rare complication of pregnancy.

[P8.10]

Rifampicin as an Adjunct to Ursodeoxycholic Acid for Treatment of Refractory Intrahepatic Cholestasis of Pregnancy: A case report

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Introduction: Mainstay of treatment of intrahepatic cholestasis of pregnancy (ICP) remains ursodeoxycholic acid (UDCA). Here we are reporting a case of severe and refractory ICP, which was managed by UDCA and rifampicin. Rifampicin enhances bile acid detoxification and bilirubin excretion.

Case report: A 28 year old, G₇P₀₊₃₊₃₊₁ had history of previous 3 preterm births and jaundice in all previous pregnancies. During this pregnancy also, she developed jaundice at 16 weeks. Her serum bilirubin was 6.6 mg/dl, liver enzymes were normal, alkaline phosphatase was 735 IU/L. Other causes of liver diseases were ruled out. Serum bile salts were 198µmol/L hence ICP was diagnosed. Patient was started on oral UDCA 300mg thrice/daily, her bilirubin continued to rise and reached 14 mg/dl at 22 weeks. UDCA was increased to 450mg thrice/day. Since there was no improvement, oral rifampicin 300mg once daily was added a week later. Bilirubin declined to 5.5 mg/dl at 31 weeks of gestation. Patient spontaneously went into labour at 32 weeks and delivered a 1.5 kg male child. Rifampicin was stopped 2 weeks post-delivery. Patient's bilirubin returned to normal 3 weeks post-delivery.

Conclusion: Adding rifampicin with ursodeoxycholic acid therapy is an option for managing severe and refractory ICP.

[P8.11]

An Unusual Case of Impending Eclampsia After Laparoscopic Adrenalectomy for Pheochromocytoma in Pregnancy

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Objective: Hypertension in pregnancy still remains a challenge and needs lot of attention. Here we report an unusual case of hypertensive crisis necessitating preterm termination of pregnancy even after laparoscopic adrenalectomy in a patient of pheochromocytoma with successful maternal and fetal outcome. **Method:** A 26years old woman gravida 2 with no living issue was diagnosed to be a case of left adrenal pheochromocytoma on evaluation for chronic hypertension at 14weeks of gestation. Her ultrasound abdomen was suggestive of left adrenal suprarenal mass which was subsequently confirmed by magnetic resonance imaging (MRI). MRI abdomen was suggestive of T2 heterogenous bilobed mass in the left suprarenal region (~3x3.5x5cm) without any obvious invasion or distant metastasis. After stabilizing her blood pressure and blood sugar, she was planned for left adrenalectomy. She underwent laparoscopic left adrenalectomy at 16 weeks of gestation. Intra and postoperative course was uneventful. At 32weeks gestation, emergency lower segment caesarean section was done for impending eclampsia with poor Bishop score. At 9 months follow up, Both mother and baby are fine. **Results and Conclusion:** Although our patient was on extensive monitoring, pregnancy could not be continued till term. She had hypertensive crisis inspite of in hospital management with multidisciplinary team approach. If diagnosed early in pregnancy, patient can undergo definitive surgical treatment in second trimester. Antenatal timely diagnosis and appropriate management can save the mother and fetus both from disastrous consequences.

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