



AOGD BULLETIN



Volume 20 | May 2020 | Monthly Issue 1

Price ₹30 Only

**CARING FOR WOMEN'S HEALTH :
EVIDENCE, ATTITUDE & PRACTICE**

Dedicated Issue:
Safe Motherhood in times of COVID -19



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Volume 20 • Monthly Issue 1 • May 2020

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Contents

- **SURAKSHIT NARITVA - LESSONS LEARNT: An a bridged version of the round table meeting held on 28/2/2020 as part of NATIONAL FOGSI CONFERENCE** 8
Compiled by Pikee Saxena, Vineeta, Neeti Tiwari, Ruma Satwik, Ankita Srivastava, Sharmistha Garg, Neha Gupta, Geeta Mediratta
- **Myths and Facts Related to COVID 19** 16
Manju Puri, Aparna Sharma
- **COVID-19 in Pregnancy: A Review** 21
Atul Kakar, Shikar Tripathi, Atul Gogia
- **FOGSI GPCR Good Clinical Practice Recommendation on PREGNANCY WITH COVID-19 Infection** 27
Compiled by Mamta Dagar
- **Joint RCOG, BSGE and BGCS Guidance for the Management of Abnormal Uterine Bleeding in the Evolving Coronavirus (COVID-19) (Pandemic 31 March 2020)** 38
Complied by Mala Srivastava
- **Gynaecological Surgeries: Which cases to operate and how? How much is endoscopy feasible during this Pandemic** 41
Kanika Jain
- **Study of Maternal Near Miss Cases and Events in A Tertiary Care Centre** 46
Rekha Pandey, Geeta Mediratta, Sharmistha Garg, Harsha Khullar
- **Journal Scan** 51
Ruma Satwik
- **Cross Word Puzzle** 53
Assembled and Designed by Ruma Satwik

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Publisher/Printer/Editor

Dr Geeta Mediratta and Dr Chandra Mansukhani on behalf of Association of Obstetricians & Gynecologists of Delhi.

Printed at

Process & Spot C-112/3, Naraina Industrial Area, Phase-1, New Delhi 110 028

Published from

Institute of Obstetrics & Gynaecology
Sir Ganga Ram Hospital, Sarhadi Gandhi Marg, Old Rajinder Nagar, New Delhi-110 060

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From the President's Pen



With great enthusiasm and pleasure we accepted the AOGD Secretariat from AIIMS with effect from 01/04/2020. Our team of AOGD from Sir Ganga Ram Hospital, New Delhi had been waiting eagerly to shoulder this prestigious responsibility.

Since, there is this prevailing pandemic due to the Corona Virus Outburst in Delhi as well as the entire country there is wisdom in staying at home and staying safe. The entire medical fraternity throughout the length and breadth of the country, as well as, all the brave AOGD members are fighting tooth and nail with this pandemic. We appreciate all the corona warriors who are working day and night in this endeavour.

As the lockdown continues, we are unable to bring out the printed bulletin, so we will bring out our e-bulletin. Besides, we shall also try to be active on the website and keep posting the updates regularly. During this period we shall organise various webinars for the benefit of our members.

This e-bulletin has key points from the round table meets of the national conclave on sexual and reproductive health for women the “SurakshitNaritva”, nicely and amicably knitted by our very senior editors Dr. Geeta Mediratta and Dr. Chandra Mansukhani. There are precise discussions on sexuality education for the teens, comprehensive abortion care, acts governing SRH practises in India, integrated contraceptive approach across reproductive age through contraception clinic and post partum contraception.

This bulletin also has thrown lights on protocols for treating the patients of abnormal uterine bleeding as well as post menopausal bleeding. There is a briefing about the endoscopic procedures during and after this pandemic. The protocols for managing pregnant patients during antenatal, intrapartum and postpartum period will also be highlighted.

We are trying to work hard in imparting the knowledge on the recent advances in Obstetrics and Gynaecology. Hope we are successful in, fighting this pandemic and come out as a winning nation.

Till then take care and be safe and honour the lockdown completely. Long live AOGD. Warm Regards.

Dr Mala Srivastava

President, AOGD

Vice President's Message



Greetings to all members of The Association!

We are in the middle of a battle against one of the most primitive form of life, **“the virus COVID 19”**. It has emerged as, perhaps, the biggest threat mankind has faced in its entire existence.

Dear colleagues, I would like to sincerely thank you, members of our fraternity and the self-sacrificing para staffs, who have imperilled their lives and are selflessly putting forth their gallant efforts to fight this Global Pandemic.

I join my hands in prayer for all these faceless members of COVID task force for their safety and well-being!

Recently we successfully hosted the National Conference on **“Sexual and Reproductive Health for Women”** at Hotel Lalit from 28th Feb to 1st March 2020. We had excellent interactive sessions chaired by senior dignitaries and our young colleagues, round table meetings conceptualising guidelines, presentations of free papers and posters followed by interactive panel discussions.

We are now ready with the May issue of AOGD e-bulletin. We are very fortunate to have in our editorial team, stalwarts like **Dr Geeta Mediratta & Dr Chandra Mansukhani**. This bulletin covers the key points of RTMs on **“Surakshit Naritva”** and a few writeups on the contemporary issues in Obs & Gynae in the context of present day Covid 19 scenario.

This is the first e-bulletin from our AOGD secretariat at Sir Ganga Ram Hospital. We hope it keeps you abreast with latest advances in Obs & Gynae. We shall also be putting forth our sincere endeavours for creating alternate knowledge sharing platforms, such as webinars and utilise our own website for encouraging our colleagues in the pursuit of their academic goals.

We may face some serious challenges in the coming months. This is the time to demonstrate solidarity. It requires all of us to work together in unison to ensure optimum result in terms of protecting the lives and wellbeing of the vast multitude of our people as well as the brave Health Care professionals.

‘Mother’s Day’ on 10th May & **‘Nurses Appreciation Day’** on 6th of May were celebrated with full galore during the lock down and the efforts of the national warriors were appreciated by the nation.

Last but not the least, my sincere thanks to our **Senior Advisors** of SGRH family and our president Dr Mala Shrivastava for their valuable guidance throughout this journey, and my gratitude, in anticipation, towards a fruitful culmination.

With Warm Regards,

Dr Kanika Jain
Vice President AOGD (2020-21)

From the Secretary's Desk



Greetings to all !

To begin with, I would like to express my heartfelt thanks to our President Dr Mala Srivastava for bestowing her trust upon me to carry on the responsibility of Secretary AOGD.

As the entire nation is facing COVID-19 Pandemic, the academic deliberations might continue through e-bulletins and webinars till COVID crisis is over. We must disseminate the learnings of **FOGSI GCPR on PREGNANCY with COVID-19 Infection**, an initiative by our visionary FOGSI President Dr Alpesh Gandhi amongst all. Our esteemed AOGD faculty members too are playing a key role in addressing this issue by organizing informative webinars.

Our dedicated editorial team is working hard at the backend to bring forth a good academic bonanza. I request active participation from all our AOGD members and open to suggestions to serve you better.

Let's remain positive and look ahead with a firm belief that tomorrow will be a better day.

Looking forward to your continued support.

Optimism is the faith that leads to achievement. Nothing can be done without hope and confidence. - Helen Keller

Warm Regards

Dr Mamta Dagar

Hon. Secretary

Monthly Clinical Meeting

AOGD Monthly Virtual Clinical Meet will be organised by BL Kapoor Hospital, New Delhi on **Friday, 29th May, 2020 from 04:00pm to 05:00pm.**

From the Editor's Desk



Dr Geeta Mediratta

We are living in difficult times indeed!!

Let this be a wake –up call to all of us to innovate, experiment with new ideas and above all acquire spiritual strength to handle all type of situations.

The AOGD secretariat has now been taken over by Sir Ganga Ram Hospital w.e.f April, 2020: A watershed moment in the history of entire mankind !!!

This year shall be forever etched in the memory of all generations to come.

We at AOGD are determined to stand up to the challenges thrown at us in view of the lockdown and will make sure that the relevant academic contents reach all members through the website as of now. The bulletin distribution shall start as soon as circumstances permit.

This bulletin is dedicated to Safe Motherhood – A Very relevant topic in today's COVID – 19 scenario. A great deal has been now revealed about COVID- 19 in pregnancy. We are highlighting the current knowledge data base known to us as of now through articles on COVID-19 in pregnancy, Myths and Facts Related to COVID 19, the FOGSI guidelines for good clinical practice for COVID – 19 in pregnancy.

As we are aware the FOGSI committee held a meeting on Surakshit Naritva in February 2020. We are highlighting the key points which were discussed in the meeting. However a detailed manual shall be shortly released by FOGSI SRH committee.

We welcome any suggestion of over esteemed members.

Happy reading.

Editorial Team



Dr Chandra Mansukhani

SURAKSHIT NARITVA - LESSONS LEARNT

An a bridged version of the round table meeting held on 28/2/2020 as part of
NATIONAL FOGSI CONFERENCE

Women's Reproductive and Sexual Health Ensure, Enable, Empower

Held on 29th February- 1st March 2020, The Lalit, New Delhi

Compiled by PPIkee Saxena, Vineeta, Neeti Tiwari, Ruma Satwik, Ankita Srivastava, Sharmistha Garg,
Neha Gupta, Geeta Mediratta

Introduction

Sexual and Reproductive health of the women in developing nations is a very important aspect of health care for women.

Even though we are close to achieving replacement level fertility rate of 2.1 (we are averaging 2.2 at present) the unmet need for contraception remains at 13%. The rate of unintended pregnancies remains at 49% and need for a safe abortion service has never been higher. To bridge this gap FOGSI has brought out a white paper manual on SRH services for women to be followed by FOGSIANS in every day practice.

National FOGSI Conference on Womens's Reproductive and sexual health was held from 29th February – 1st March 2020 in New Delhi under the Leadership of Dr. Shobha N. Gudi, Dr. Alpesh Gandhi.

The deliberations on five key areas of SRH services took place as round table meets at a dedicated conference at New Delhi on the 28th of February 2020.

The two hour deliberations yielded a white paper concrete directive of key points for improvising practices in these complex areas of SRH services.

The components of the meeting were as follows: -

- A) Comprehensive sexuality education for teens
- B) FOGSI I Care: - Integrated Contraceptive approach across reproductive age through contraceptive clinic.
- C) Post partum contraception - when to begin the counseling and how to improve uptake.
- D) Acts governing SRH Practices: subtleties pitfalls, crucial tips for practice, MTP, IPC, Evidence act, PC PNDDT.

E) Ensuring universal access to high impact CAC service.

A White paper which is an authoritative report or guide was brought forth to fully inform everyone regarding these topics as it was thoroughly researched and actively debated by all the members who then brought forth the recommendations.

A. COMPREHENSIVE SEXUALITY EDUCATION FOR THE TEENS.

Key practice Points (KPP) for Implementation

KPP 1 :

- The curriculum for CSE- Knowledge should be framed based on their cognitive ability, it should be scientifically accurate, culturally relevant, age-appropriate.
- At high school basic anatomy, functioning and health related to puberty and sexual behavior can be discussed.
- At intermediate college, 11th and 12th when risk taking behavior begins and cognitive ability improves, we can teach sexuality, contraception and health risks of unsafe sex. Adequate information about family planning, conception, contraception, condoms for dual protection, reproductive tract infections, sexually transmitted infections, HIV and HPV, prevention, HPV vaccination, are all salient features of the proposed curriculum.
- Training, practice feedback, supervision, refresher training, research, audit and quality control of the CSE should be mandatory

KPP 2 :

HEADSS SCORING ASSESSMENT

A participatory and interactive session to be

built into the curriculum where adolescents can score themselves on following counts :

- Home environment
- Education : school grade performance
- Activities-sports, hobbies
- Drugs-use by family or peers
- Sexuality-orientation, experience, pregnancy, abortion, contraception
- Suicide- depression, sleep disorder etc.

The self assessment score helps the teen to resolve doubts and dilemmas.

KPP 3 :

- Teachers/trainers - Willing, well trained, comfortable, respectful & non-judgemental
- Involvement of young people as peer educators to give them ownership, empowerment and motivation so they in turn sensitize the teens and act as referral points to experts and services.

KPP 4

- Collaborate with other GOI programs like RKSK and NACO

KPP 5 :

Gender sensitization programs to be developed by FOGSI. Teach the adolescent about consent and privacy - how to "SAY NO" and how to "ACCEPT NO". Respect others' right to bodily autonomy. 18% of high school students have been forced to have intercourse, while 1 in 10 have committed sexual violence. Teens must express dignity and respect for all people, regardless of sexual orientation or gender identity - equality for lesbian, gay, bisexual, and transgender (LGBT) individuals.

KPP 6:

Information about local laws- POCSO, MTP important for both students and educators

KPP 7 :

All teens should be given options for training in physical fitness and skill for self defense preferably in martial arts, an immediate defence mechanism against violence.

KPP 8 :

CSE should be well accepted and respected universally, supported and reinforced by family, peers, religious groups, civic society, reproductive health clinics and local media.

KPP 9 :

- New platforms created by FOGSI for reaching out to young people: Information, communication technologies, social media determine sexual behavior in teens :

1. Reducing impact of Harmful messages:

- Images related to sexual activity, Cyber bullying, Sexting, Alcohol/tobacco/drugs, By creating positive messages about sexuality and sexual health through FOGSI Cyber café: Mobile Apps, websites, web telecast, Facebook, eLearning modules.

2. Helpline for youth, email and text messaging service allows young people to reach out anonymously.

3. Articles for Media literacy about safe sexual behavior in adolescents.

4. Encourage small group discussions and activities as a workshop approach –more participatory

5. Plays, songs, movies, radio & TV shows

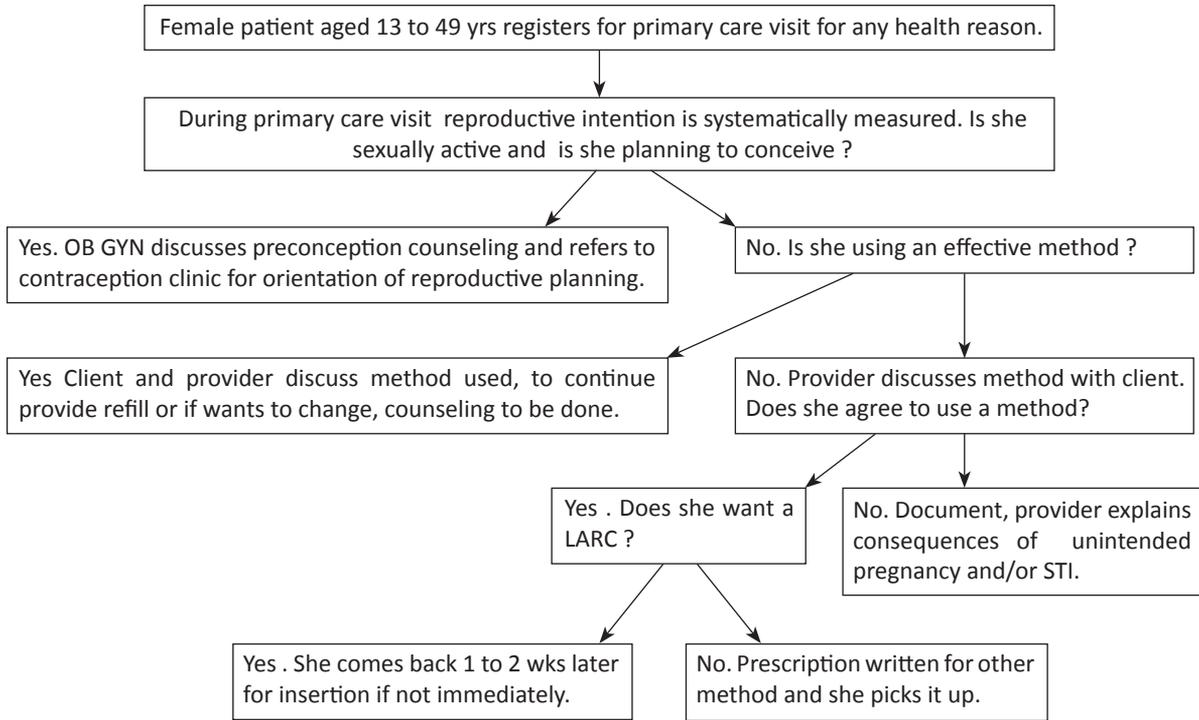
KPP 10.

MONITORING THE CSE PROGRAM

- Ask school –take feedback from teachers, parents,
- Pre and post test questionnaire., Analyze the response
- Generate evidence based data
- Use indicators/check lists for quality control and bring about changes when necessary.

B. FOGSI CARE: - INTEGRATED CONTRACEPTIVE APPROACH ACROSS REPRODUCTIVE AGE THROUGH CONTRACEPTIVE CLINIC.

KPP 1 : INTEGRATED SERVICES TO BE PROVIDED ACROSS ALL REPRODUCTIVE AGES



KPP 2 : Integration of the adolescent, preconceptional, Antenatal care with relevant awareness messages can happen at every point of contact of the obstetrician gynaecologist and the client/patient. In all above clinical scenarios, after consultation on the presenting problem, the OBGYN should

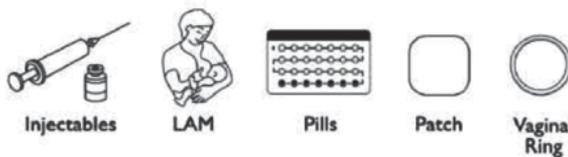
explore the unmet need for contraception and apply Medical eligibility criteria and initial advice on appropriate methods and refer the client for further counseling to the contraception clinic. The tools used are the MEC wheel and the effectiveness chart.

More effective
Less than 1 pregnancy per 100 women in one year

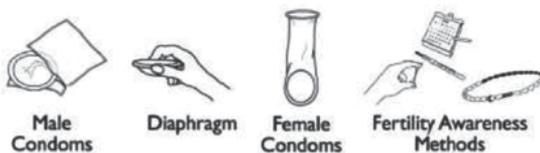


How to make your method more effective

Implants, IUD, female sterilization: After procedure, little or nothing to do or remember
Vasectomy: Use another method for first 3 months



Injectables: Get repeat injections on time
Lactational Amenorrhea Method (for 6 months): Breastfeed often, day and night
Pills: Take a pill at the same time each day
Patch, ring: Keep in place, change on time



Condoms, diaphragm: Use correctly every time you have sex
Fertility awareness methods: Abstain or use condoms on fertile days. Standard Days Method and Two-Day Method may be easier to use.

Less effective
About 30 pregnancies per 100 women in one year

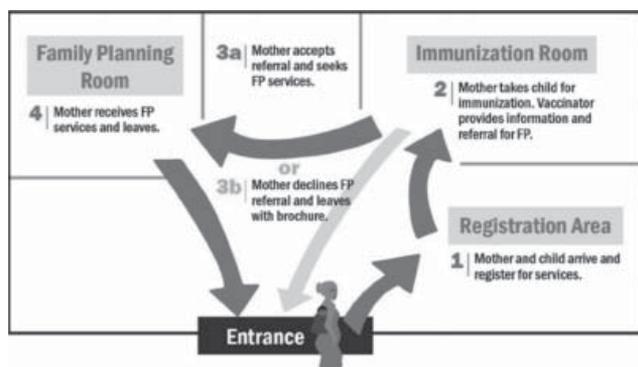


Withdrawal, spermicides: Use correctly every time you have sex

KPP 3 : Establishment of dedicated **FP units**, a contraception **I Care** clinic (one unit/ opd of 30 patients/day) to create an interphase between the couple and the health care worker.

KPP 4 : Integrating of services with FP advise with immunization services.

a. Family planning room : Mother receives FP service and she leaves.



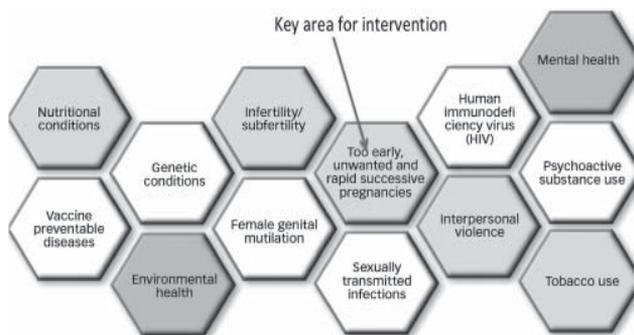
KPP 5 : Integrating adolescent gynaecological care with contraception :

- Non judgemental service provision, privacy, enhancing the basket of choices, subsidized cost may build up better attitudes about contraception.

KPP 6 : Integrating **preconceptional care** with family planning to avoid too-early, unwanted and rapid successive pregnancies.

- Monitoring nutritional status, Screening for anemia Supplementing iron and folic acid.
- Taking a thorough family history and Genetic counseling
- Screening for diabetes mellitus.
- Promoting exercise.
- Salt iodization
- Family planning as in reproductive planning on number of children and spacing between them
- Carrier screening for HIV, HbsAg etc.

WHO has developed a package of preconception care interventions which includes family planning.



IMPLANT	IUD	PILL	MALE CONDOM
HOW TO USE IT: • Placed by health care provider • Lasts up to 3 years	HOW TO USE IT: • Placed by health care provider • Copper IUD lasts up to 10 years • Progestin IUD lasts 3-5 years	HOW TO USE IT: • Take at the same time each day	HOW TO USE IT: • Use correctly every time during sex
 Chances of getting pregnant: Less than 1 out of 100 women*	 Chances of getting pregnant: Less than 1 out of 100 women*	 Chances of getting pregnant: 9 out of 100 women*	 Chances of getting pregnant: 18 out of 100 women*
MOST EFFECTIVE		LEAST EFFECTIVE	
<i>Condoms should always be used along with the preferred birth control to protect against sexually transmitted diseases.</i>			
<small>*Number of pregnancies per 100 women using the method within first year of typical use.</small>			

KPP 7 : Integrated contraceptive approach during pregnancy to improve post partum uptake :

- All women with low risk pregnancies must visit the I care clinic at least once in the antenatal period preferably with spouse
- A consent form/seal for contraceptive service can be used to identify the couple’s tentative choice after further counseling in the I care clinic.
- Women with high risk pregnancy, the focus is of course on management of the primary illness, they must also absolutely recognize the need for delaying the next conception and can be informed on methods at an opportune time.
- Women with GDM should be assured that all contraceptives are safe for them.
- Those women with APLA, hypertension , epilepsy on medication with enzyme inducers must be informed about the non hormonal methods of contraception and so on.

KPP 8 : PPFp : Post partum family planning.

- **Integrated contraceptive approach in the post partum period :**
- **PPFP can be Post placental-**within 10 minutes of delivery(for PPIUCD), **immediate post partum-**delivery to 48 hours, **post partum** -initial 6 weeks after delivery, **extended post partum** -6weeks to 1 year of delivery.
- **Counseling in the I Care clinic** can be in any of these situations, for the spouse or to the couple whichever feasible.
- ABCD of post partum care :
Abdominal Exercises
Breast feeding
Contraception
Diseases – follow up
 (Anaemia, HTN, DM, immunization HPVetc.)

KPP 9: Integration of FP with Post abortalcare : as part of CAC : comprehensive abortion services.

- The post abortion period, when the woman is still at the facility, it is an opportune time for post abortion contraception counseling and couple can be sent to I Care clinic, helping her to choose from available methods that can be started immediately after abortion procedure.
- Method specific counseling; Insertion of progestogen-only implants (IMP) at the time of abortion is convenient, acceptable, high continuation rates

IUCD can be safely used by women after an uncomplicated abortion.

Women may be advised of benefit from reduced uterine bleeding with LNG-IUS.

PTL :Some LARC methods are as effective than female sterilization and may confer non-contraceptive benefits.

CHC should be avoided by women with REM (recurrent early miscarriage) until antiphospholipid syndrome (APS) has been excluded.

KPP 10 : The interval situation integrated with contraceptive advice : Interval situations refer to – *Adoption or insertion of family planning methods at any time during cycle and is not in relationship to the end of pregnancy.*

C. Post Partum Contraception - When to begin the counseling and how to improve uptake.

KPP1: *When should the discussion start?*

- Counselling on Post Partum Contraception should ideally be initiated in the antenatal period.
- Antenatal card should have a column on post partum contraception options. Choice of contraception should be documented on the antenatal card.
- If intranatal period is the point of first contact, initiate discussion in early labour.
- No opportunity to be missed for counseling. Including immunization visits of her infants.

KPP2: *Who should initiate the discussion?*

- The first counseling should be done by a medical practioner, that includes availability, efficacy, usage and side-effects of the method
- Paramedical staff may be involved in providing information on methods concerning its usage. They may also be employed during follow up visits.

KPP3: *Initiating counseling*

- Inform women of health benefit of post partum contraception and health benefits of spacing.
- Offer the basket of contraception options available to the couples that are not likely to affect breastfeeding process.
- Special medical conditions to be kept in mind

while offering contraception options (WHO MEC 2015, edition 5)

- Health Care Providers should be aware of the Medical Eligibility Criteria before offering choices of birth control in the post partum period

KPP4: Counseling method

- Comprehensive, unbiased, pictorial, updated information to be provided
- Audiovisual aids may be used.
- The counseling should be in the language understandable to the couple.
- An individual approach needs to be maintained while providing contraceptive counselling
- No coercion should be applied during counselling
- Myths and misconceptions pertaining to contraceptive usage to be addressed.
- It is advisable to include spouse/family member in the counseling,

KPP5: Breastfeeding as a contraceptive method

- For women able to exclusively breast feed, women should be informed that EXCLUSIVE breast feeding is an effective contraceptive method for the first six months till the return of menses with a failure rate of 2%
- For women not able to exclusively breast-feed, women should be informed of an early return to fertility and a need to initiate early contraception.

KPP6: Progesterone only contraceptives

- Couples should be informed of the safety of progesterone only contraceptives during breast feeding.
- Progestin only methods (implants, pills, LNG IUS and injectables) can be started anytime after childbirth including immediately after delivery
- If POPs are chosen DSG containing pills score over LNG containing pills

KPP7: Long-acting reversible contraceptive or LARC

- A long acting reversible contraception method like PPIUD or progesterone implants should be preferred in the post partum period. They are proven to be most effective and are ideal for

spacing periods of two or more years.

- Intra Uterine Devices may be used within the first 48hrs of delivery irrespective of route or after 4 weeks

KPP8: Other methods

- Couples should be informed that barrier methods like condoms remain a viable option.
- Couples should be informed that emergency contraception is safe in the breastfeeding period
- If non-hormonal methods are preferred centchroman or ormeloxifene may be suggested
- Female condoms and other female barrier methods like vaginal diaphragms or cervical caps may be used six weeks after delivery due to an inappropriateness of fit in the immediate post partum period

KPP9: Permanent methods

- Female or Male Sterilisation is an option which may be considered if the family is complete
- Mini laparotomy in the immediate post partum period or clips at laparoscopy should be considered
- Issues of regret and increased failure rates should be discussed while considering post partum sterilisation

KPP10: Ensuring continuation

- There should be provision of continuing care and support with the Health Care Provider
- Regular counselling and trouble shooting helps in improving compliance
- Follow up visits essential
- Reassurance needed when side effects like menstrual disturbances occur.
- The clinician should have knowledge of how to manage side effects like excessive menstrual bleeding, breast tenderness, mood disturbances etc.
- If she insists on discontinuing, help her switch to other methods.

D. Acts Governing SRH Practices: Subtleties Pitfalls, Crucial Tips for Practice, MTP, IPC, Evidence Act, PC PNDT

1. The Medical Termination of Pregnancy Act 1971

Key Practice Points

1. If the woman opting for MTP is >18 years of age then consent of the woman is only required but if the girl is a minor or mentally unstable then signature of guardian is required.
 2. If the girl is less than 18 years of age then as per the POCSO act police need to be informed even if the girl is married.
 3. All the records pertaining to MTP are confidential and they are not open for inspection except by the authority of law.
 4. Name of the woman opting for medical/surgical abortion should not be mentioned in the discharge summary only the serial number [as per the MTP register maintained by the institution] should be mentioned
 5. Separate approvals are required for performing MTP i.e upto 12 weeks and upto 20 weeks any institute/hospital and certificate should be displayed.
 6. Medical method of abortion should only be prescribed at unapproved clinics/site if there is an access/ referral linkage to MTP approved centre and a certificate from the owner of the approved centre should be displayed at the clinic.
2. The Protection of Child Against Sexual Offences (POCSO) Act [2012]

Key Practice Points

1. Every case of child sexual assault is to be treated as an emergency and free treatment is to be provided by all private and government hospitals.
2. Conduct a medical examination with the consent of child/parent/ guardian, depending upon the age of the child.
3. Doctor is bound to inform the police.
4. No body can force the survivor to undergo medical examination without informed consent of child/parent/guardian.
5. Make an MLC or take an informed refusal if the victim does not want to pursue any police case
6. MLC number and the police station number must be recorded if the victim has already lodged a complaint or if the victim wishes to lodge a complaint later.

7. For a child who is less than 12 years of age, consent of guardian is required but if the child is more than 12 years of age then only his/her consent is required for examination.
 8. Any child who is less than 18 years of age comes to clinic seeking abortion or even if there is any suspicion of sexual activity like seeking contraceptive advice, the doctor is bound to inform the police as per POCSO act.
3. The Pre-Conception and Pre-Natal Diagnostic Technique Act 1994

Key Practice Points

1. Certificate of registration is very important for all genetic clinic, genetic counselling centres and genetic laboratories.
2. FORM A is required to be filled and sent in duplicate to the Appropriate Authority for applying for registration.
3. Validity of registration is for 5 years and application of renewal should be sent to the appropriate authority within 30 days of expiry in duplicate in Form A.

E. Ensuring Universal Access to High Impact CAC (comprehensive abortion care) Service.

Key Practice Points for Legislation

1. There is an advocacy to decriminalise Abortion under IPC. Under IPC Sec. 312- Induced abortion is a crime, but under the Umbrella of MTP Act, the provider is protected as an exception.
2. MTP Act sometimes conflates with: PC PNDDT Act, where in, in order to reduce gender selection, there might also be reduction in safe abortion, the POCSO Act where the doctors are required to inform the Child Welfare Association about intercourse below 18 years and the Biomedical Waste Rules of Disposal of products. However, we must make sure that the mentioned acts do not come in the way of safe abortion.
3. **Technique of 1st & 2nd Trimester**
First trimester abortions are conducted by mifepristone and misoprostol up till 63 days. Medical termination is preferred from 9 to 12 weeks whereas surgical methods are preferred from 12 to 14 wks mainly through

vacuum aspiration. FOGSI is undertaking the pilot project to involve MBBS Doctors for carrying out the same in order to spread comprehensive and safe abortion care to a wider population.

In the second trimester, we can carry out medical and surgical methods. Medically, mifepristone and misoprostol protocols are followed. (Standardised WHO GOI FOGSI Protocols) and surgically, evacuation is considered. Hysterotomy is also an option as second trimester termination.

4. Training Requirements- Provider Base Categories

The care provider must be either a postgraduate in obstetrics and gynaecology or a registered medical practitioner, registered in state medical register. The registered medical personnel should have a practice in obstetrics and gynaecology for 3 years, or 6 months house surgery in OBGY. The registered medical personnel may also have assisted as an RMP in 25 cases of MTP, out of which 5 performed independently, 10 assisted and 10 cases observed.

FOGSI is coming up with training programmes and automatic recognition of MBBS Doctors. Role of mid levels under government control is important to provide safe abortion care to increasing number of women all over India.

5. Complications and Management

There should be recognition of unsafe abortions and ectopic pregnancy at the primary level and prompt referral services need to be activated in place. There is a need to sensitise the primary health workers to the complications and referral networks need to be strengthened. There should be proper education regarding the complications among women as well regarding the early recognition of complications and seeking proper medical care.

Various aids, like pictorial charts and broadcasts can be used in order to achieve this aim.

6. Post Abortion Contraceptive

After the first trimester abortion, immediate contraception can be provided, after medical

as well as surgical abortion. All methods of contraception can be used after first trimester abortions and ligation can be simultaneously done.

After second trimester abortions, however, immediate post surgical abortion IUD may lead to expulsion and a mild increase in perforation rate so further evidence is required to validate its use.

Other Interventions

New Reporting Systems and online systems are being developed. Helpline numbers are being provided and stand alone clinics, with registration in line with PC PNDT Act, are coming up for easier and more widespread access.

Members of the round table

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Myths and Facts Related to COVID 19

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COVID 19 is Corona virus disease due to new Corona virus officially named SARS Co V-2. Corona viruses are a large family of viruses that circulate among animals, including camels, cats, and bats. Rarely, animal coronaviruses can mutate and infect people and then spread by human to human transmission. These viruses are known to cause respiratory infections ranging from the common cold to more severe diseases as in MERS and SARS.

The outbreak of COVID-19 was initially noticed from a seafood market in Wuhan China in December 2019 and has now spread worldwide. It is highly contagious and there is clear evidence of human-to-human transmission of SARS-CoV-2.

Modes of Transmission

It is thought to be transmitted mainly through respiratory droplets that get generated when people cough, sneeze, or exhale. SARS-CoV-2 also gets transmitted through fomites that is objects or surfaces on which these droplets fall. The person gets infected by touching the eyes, nose, or mouth after touching infected objects or contaminated surfaces. It may be transmitted by aerosols during aerosol generating procedure like suction, intubation, and ventilation etc. The virus has not been detected in the amniotic fluid, cord blood and placenta hence vertical transmission is unlikely. Moreover, the reported incidence of maternal viremia is low < 1%.

Clinical Features

The clinical features of COVID-19 include fever and/or new dry cough, shortness of breath, sore throat, muscle aches, rhinorrhoea/nasal congestion, and possibly abnormalities in smell and/or taste. COVID-19 is mild in 80%, moderate to severe in 15%, and critical in 5%. It is associated with a mortality rate of 2.3%.

Mild: No or mild symptoms (fever, fatigue, cough, or breathlessness)

Moderate to severe: Tachypnoea (respiratory

rate >30 breaths per minute), hypoxia (oxygen saturation \leq 93 percent on room air or partial pressure of oxygen/fraction of inspired oxygen $[PaO_2/FiO_2]$ <300 mmHg), or >50 percent lung involvement on imaging within 24 to 48 hours.

Critical: (e.g. with respiratory failure, shock, or multiorgan dysfunction)

There is neither any treatment for this disease nor any vaccination to prevent this disease. The digital platform is full of information and misinformation about COVID 19. There is immense fear and apprehension associated with this condition amongst healthcare professionals.

There are many myths related to this condition and it is essential for the Obstetricians and Gynecologists to have the right information to be able to prevent the spread of this disease and stay safe themselves. This is a new disease hence the understanding of this disease is slowly evolving. The guidance for the screening and management is dynamic and undergoing rapid changes hence the need for health care professionals to stay updated with the latest.

Case Definitions:

Any patient with a laboratory confirmed diagnosis of COVID 19 is a confirmed case. Not all patients presenting with cough or fever are COVID suspects. It is important to ask for history of TOCC that is Travel, Occupation, Contact and Cluster. International travel in last 14 days, whether the person is a healthcare professional, any significant contact and whether the person lives or has been to an area with community spread of disease in the period extending from 24 hours from the onset of symptoms of the disease.

Contact

A contact is a person involved in any of the following: Providing direct care for COVID-19 patients without using proper personal protective equipment (PPE)

Or more than 15 min of face to face contact.

Or being in the same close environment as a COVID-19 patient (including sharing workplace, classroom, or household, or attending the same gathering).

Case definitions as per WHO's interim guidance, "Global surveillance for COVID-19 caused by human infection with COVID-19 virus" are described as below.

1. Suspected case

- A. A patient with acute respiratory illness (fever and at least one sign/symptom of respiratory disease (e.g. cough, shortness of breath) AND with no other aetiology that fully explains the clinical presentation AND a history of travel to or residence in a country/area or territory reporting local transmission of COVID-19 infection during the 14 days prior to symptom onset; OR
- B. A patient with any acute respiratory illness AND who has been in contact with a confirmed or probable COVID-19 case (see definition of contact above) in the 14 days prior to onset of symptoms; OR
- C. A patient with severe acute respiratory infection (fever and at least one sign/symptom of respiratory disease (e.g. cough, shortness of breath) AND requiring hospitalization AND with no other aetiology that fully explains the clinical presentation.

2. Probable case

A suspected case for whom laboratory testing for COVID-19 is inconclusive.

3. Confirmed case

A person with laboratory confirmation of COVID-19 infection, irrespective of clinical signs and symptoms.

Any suspected case should be tested for COVID-19 infection using available molecular tests, such as qRT-PCR. Lower respiratory tract specimens likely have a higher diagnostic value compared with upper respiratory tract specimens for detecting COVID-19 infection.

Whom to test

Depending upon the status of spread of disease the MoHFW keeps changing its strategies for COVID 19

testing in India. The Advisory by ICMR Department of Health Research version 1 dated 9th April 2020 directs that testing be carried out in the following categories of persons.

1. All symptomatic individuals who have undertaken international travel in last 14 days
2. All symptomatic contacts of laboratory confirmed cases
3. All symptomatic Healthcare workers
4. All patients with Severe Acute Respiratory Illness (fever AND cough and/or shortness of breath) requiring hospitalization
5. Asymptomatic direct and high-risk contacts of a confirmed case should be tested between day 5 and day 14 of coming in his/her contact
In hotspots / clusters (as per MoHFW) and in large migration gatherings/ evacuees' centres

All symptomatic ILI (fever, cough, sore throat, running nose)

Within 7 days of illness – r RT-PCR

After 7 days of illness – Antibody test (If negative confirmed by r RT PCR)

The latest version of ICMR guidance on testing dated 20th April 2020 directs testing in

Pregnant women residing in clusters / containment areas or in large migration gatherings/ evacuees centre from hotspot districts presenting in labour or likely to deliver in next 5 days even if asymptomatic.

The women should be tested in the health facilities where they were expected to deliver, and all arrangements should be made to collect and transfer samples to testing facilities. The women should not be referred for lack of testing facility.

Personal Protective Equipment PPE

Personal protective equipment consists of garments placed to protect the health care workers from contracting infection. It covers eyes, nose, mouth, and skin and protects against blood, body fluids and respiratory secretions. For protection from droplet infection a mask, gown and gloves are required. In case there is risk of airborne infection the mask used should be a respirator. WHO has published guidance on rational use of PPE for Corona Virus Disease on 19th March 2020. According to this person involved in direct contact

with COVID 19 positive patient should use medical mask, gown, gloves and goggles or face shield for protection of eyes and face. In case aerosol generating procedures are performed on COVID 19

patients the medical mask should be replaced by a respirator. GOI has issued its guidance on the use of PPE for persons involved in the care of COVID 19 (Fig 1)

Patient Care Activities /Area	Risk of Exposure	Triple Layered Mask	N-95 Mask	Gloves	Gown/Coverall	Goggles	Head Cover	Shoe cover
Triage Area in OPD	Moderate risk	X	✓	✓	X	X	X	X
Help desk/ Registration counter	Moderate risk	X	✓	✓	X	X	X	X
Temperature recording station	Moderate risk	X	✓	✓	X	X	X	X
Holding area/ waiting area	Moderate risk	X	✓	✓	X	X	X	X
Doctors chamber in OPD	Moderate risk	X	✓	✓	X	X	X	X
Clinical Management in Isolation rooms	Moderate risk	X	✓	✓	X	X	X	X
ICU facility / Critical Care Ward where aerosol generating procedures are done	High Risk	X	✓	✓	✓	✓	✓	✓
SARI ward - attending to severely ill patients of SARI	High Risk	X	✓	✓	✓	✓	✓	✓
Sample Collection/Sample testing for COVID-19	High Risk	X	✓	✓	✓	✓	✓	✓
Dead Body Packing	High Risk	X	✓	✓	✓	✓	✓	✓
Dead Body Transport	Moderate Risk	X	✓	✓	X	X	X	X
Mortuary - Dead Body Handling	Moderate Risk	X	✓	✓	X	X	X	X
Mortuary- While performing autopsy	High Risk	X	✓	✓	✓	✓	✓	✓
Sanitary staff	Moderate risk	X	✓	✓	X	X	X	X
CSSD/Laundry- Handling linen of COVID-19 patients	Moderate risk	X	✓	✓	X	X	X	X
Visitors attending OPD	Low Risk	✓	X	X	X	X	X	X
Visitors accompanying Patients in IP facility	Low Risk	✓	X	X	X	X	X	X
Supportive services-Administrative Financial Engineering Security, etc	NO risk	X	X	X	X	X	X	X

Quarantine after exposure to COVID 19 positive patient

Guidelines have been issued by CDC on 7th March 2020. The exposure has been graded into various categories low, medium, and high, based on which quarantine is decided. Source control that is whether the patient was wearing a mask or not is an important factor in determining the degree of exposure. Table no 1 given below describes the details.

How to conduct OPD?

With the lifting of lockdown and resumption of OPD, there is a fear among of the health care providers regarding acquiring infection from the patients coming to the OPD especially when we know that a majority of infected patients may be asymptomatic. Also, there is a need to understand the minimum requirement of PPE. The mode of transmission of COVID is through:

- Respiratory Droplets: From mouth or nose of a COVID positive person during coughing /sneezing
- Fomites: Objects or surfaces on which these droplets fall by touching the eyes, nose or mouth after touching infected objects or surfaces

A stepwise approach to safe practices includes:

1. Make a triage in the OPD to screen symptomatic women and those coming from containment zones
2. Ask all women to wear masks.
3. Maintain social distance at least 1 m (3 feet) better 2m (6 feet)
4. Maintain hand hygiene
5. Wear a mask (N95 only if available otherwise surgical or medical mask should be used). According to WHO guidelines, N95 should be used only when aerosol generating procedures are involved which is not expected in an OPD.
6. Do not touch your nose, eyes and mouth
7. Ensure that you and those around you maintain good respiratory hygiene
8. You and your staff should stay home if unwell

Preparedness in LR

Robust screening and triaging of all women at entry should be done to classify them into COVID non-suspect, COVID suspect or COVID positive. Consider testing all women admitted to LR or likely to deliver in next 5 days.

There should be designated centres for COVID

Prolonged close contact with a COVID-19 patient who was wearing a facemask (i.e., source control)			
HCP PPE: None	Medium	Active	Exclude from work for 14 days after last exposure
HCP PPE: Not wearing a facemask or respirator	Medium	Active	Exclude from work for 14 days after last exposure
HCP PPE: Not wearing eye protection	Low	Self with delegated supervision	None
HCP PPE: Not wearing gown or gloves ^a	Low	Self with delegated supervision	None
HCP PPE: Wearing all recommended PPE (except wearing a facemask instead of a respirator)	Low	Self with delegated supervision	None
Prolonged close contact with a COVID-19 patient who was not wearing a facemask (i.e., no source control)			
HCP PPE: None	High	Active	Exclude from work for 14 days after last exposure
HCP PPE: Not wearing a facemask or respirator	High	Active	Exclude from work for 14 days after last exposure
HCP PPE: Not wearing eye protection ^b	Medium	Active	Exclude from work for 14 days after last exposure
HCP PPE: Not wearing gown or gloves ^{a,b}	Low	Self with delegated supervision	None
HCP PPE: Wearing all recommended PPE (except wearing a facemask instead of a respirator) ^b	Low	Self with delegated supervision	None

Table no. 1:

positive and suspect women. However, as a significant number of patients are asymptomatic it is important to change certain practices in the labour room even for the COVID non-suspects:

1. All labouring women should be provided with a triple layer mask
2. Appropriate PPE impermeable gown, preferably N95 mask or triple layer with a Visor, cap, shoe covers should be adorned by Health workers
3. General precautions on hand hygiene and social distancing should be maintained
4. CS only for obstetrical indication
5. Birth companion controversial. If allowed should

be tested negative, wear a cloth mask at all times and remain with the patient

How to refer a patient who has been diagnosed to be COVID positive?

The testing guidelines are evolving rapidly with asymptomatic patients also being increasingly tested. In such a situation, any patient who tests positive must be guided and referred to the appropriate centre with due precautions which include:

1. Calling maternity unit in advance
2. Liaising with the unit regarding the time of arrival

3. Giving time to the receiving unit to prepare
4. Ask the patient to use private transport or arrange for transport in a specified ambulance
5. Ask patient to avoid public transport

Patient should also be advised regarding her attendants that:

1. The number of attendants will be restricted
2. The accompanying attendant should be asymptomatic/healthy/young
3. It is possible that the facility may not allow the attendant to enter

To conclude it is important that all health professionals have the correct knowledge of COVID 19 with respect to its modes of transmission, clinical presentation, case definitions, screening strategies, and infection prevention strategies. Given the

magnitude of the pandemic it is important that the PPE should be used rationally and simple measures like social distancing and hand hygiene should be emphasized at all times by everyone.

References

1. Rational use of personal protective equipment (PPE) for coronavirus disease (COVID-19) WHO Interim Guidance 19th March 2020.
2. Liona C Poon et al Global interim guidance on coronavirus disease 2019 (COVID-19) during pregnancy and puerperium from FIGO and allied partners: Information for healthcare professionals Accepted for publication in IJGO doi:10.1002/IJGO.13156.
3. Interim U.S. Guidance for Risk Assessment and Public Health Management of Healthcare Personnel with Potential Exposure in a Healthcare Setting to Patients with Coronavirus Disease (COVID-19) CDC Corona virus disease COVID 2019 7th March 2020.

Events held under aegis of AOGD

- 1) On 13th April 2020 - A webinar on “Care of healthcare workers during Covid-19 pandemic” by Dr Atul Gogia, Physician Sir Ganga Ram Hospital and Dr Mala Srivastava.
- 2) On 19th April 2020 - A webinar on focus on “HIV & AIDS” by Dr Anju Soni from JOGS.
- 3) On 20th April 2020 - A webinar on “Myths during covid-19 pandemic, Gynaec surgeries and the scope of endoscopic surgeries during COVID pandemic and Vaccination in pregnancy by Dr Manju Puri, Dr Aparna Sharma, Dr Kanika Jain, Dr Mala Srivastava and Dr Mamta Dagar.
- 4) On 21st April 2020 - A digital session on “Through the lens of a gynaecologist on MENOPAUSE” by Dr Mala Srivastava and Dr Shaliga Bhatnagar.
- 5) On 21st April 2020 - A webinar on “AUB” and “Yoga & Pranayam for boosting immunity” by Dr Tarini Taneja.
- 6) On 28th April 2020 - A Panel discussion on “PCOS” moderated by Dr Abha Majumdar.
- 7) On 30th April 2020 - A webinar on “Covid-19 and Fibroids Uterus” by Dr Priya Ganesh Kumar, “Infertility and Fibroid Uterus” by Dr Vidya Bhat and “Pregnancy & Fibroids” by Dr Geeta Mediratta.
- 8) On 1st May 2020 - A webinar on “Premature Ovarian Insufficiency” by Dr Mamta Dagar.
- 9) On 7th May 2020 - A webinar on “Role of progesterone in preterm labour” by Dr K Gujral and “Current Trends in management of Threatened Miscarriages” by Dr H Khullar.
- 10) On 14th May 2020 - A webinar on “Dilemmas of menopause’ by Dr Geeta Mediratta.

Forthcoming Events:

- 1) On 21st May 2020 - A webinar on “Recurrent Pregnancy Loss” and “Luteal Phase Support in IVF pregnancy by Dr Neeti Tiwari and Dr Shweta M Gupta.
- 2) On 28th May 2020 - A Panel discussion on “Endometriosis” moderated by Dr Kanika Jain
- 3) On 29th May 2020 - AOGD Virtual Monthly Clinical Meeting will be organised by B L Kapoor Hospital between 4:00pm-5:00pm.

COVID-19 in Pregnancy: A Review

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Introduction

An array of atypical pneumonia cases, caused by the novel mutated β -coronavirus, were reported in Wuhan, China in December 2019. This novel virus, was primarily labelled by World Health Organization (WHO) as the 2019-nCoV and later as coronavirus disease 2019 (COVID-19). Also, the Coronavirus Study Group (CSG) of the International Committee proposed to call it as SARS-CoV-2.

SARS-CoV-2 was isolated from a patient on 7 January 2020 and scientists came out with its genome sequencing.^[1] As of 14th April 2020, COVID-19 has a total of 1,844,863 confirmed cases including 117,021 deaths.^[2] The reproduction number (R0) value of SARS-CoV-2 was precisely derived in one study as 2.2^[3], and as a range in another (from 1.4 to 6.5).^[4] The steady growth of the COVID-19 pandemic is evident by the flared familial clusters of pneumonia and human-to-human transmission.^[5]

Since there is a paucity of data available about effects of COVID-19 in pregnancy; we must trace back to other highly pathogenic coronavirus infections (i.e., severe acute respiratory syndrome (SARS) and the Middle East respiratory syndrome (MERS)) to know COVID-19's effects on pregnancy.

Recent viral infections have elicited consequential impacts on pregnant women and their fetuses^[6], with the aggravated complications in pregnant women with H1N1 influenza virus^[7] and the severe foetal effects of Zika virus, as recent examples.^[8,9]

In this review, we'll be highlighting the correlation of complications from previous coronavirus infections in pregnant women, discuss the complications of COVID-19 in pregnant women and the possible materno-fetal vertical transmission of COVID-19.

Prior Coronavirus Infections in Pregnancy

Pregnancy is a known indicatory condition for the aggravated risk of adverse obstetrical and neonatal

outcomes from many viral infections. A whole cluster of systemic effects, which propagate the risk of complications from respiratory infections, arise due to the altered physiological and immunological state, that is a typical component of pregnancy. The cardiovascular and respiratory components of these changes, along with the development of an immunological adaptation that allows the maternal body to tolerate the antigenically diverse foetus; inflate the risk towards development of severe respiratory disease.^[10] A marked risk of maternal morbidity and mortality was observed in a meta-analyses of influenza infections, when compared with non-pregnant women.^[10,11] Similar trend was associated with pregnant women who were infected with either of the two— severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome (MERS).^[12]

Severe acute respiratory syndrome (SARS)

The SARS epidemic afflicted more than 8000 people with close to 10% fatalities, in twenty-six different countries.^[13] The causative agent SARS-CoV, a corona virus, was being transmitted via human to human contact, aerosolised droplets and environmental contamination.^[12, 14]

Twelve cases were reported of pregnant women who had respiratory distress, amongst whom 3 died during gestation (fatality rate-25%).^[12] SARS was evident in materno-fetal complications, like first trimester miscarriages (4/7 women), and intrauterine growth restriction (IUGR) (2/5) and pre-term birth (4/5) in 2nd and 3rd trimesters.^[15] It can be analysed that in terms of clinical outcomes, pregnant women were worse-hit than non-pregnant women.^[12, 15-18]

Several studies highlighted preventive approach of obstetric protocols during the SARS epidemic to curb transmission to pregnant women.^[19,20] Although the significance of these mediations was not quantifiably assessed, there definitely

arevaluable lessons that can be utilised in the approach to COVID-19.

Middle East respiratory syndrome (MERS)

MERS was first identified in Saudi Arabia during 2012, and spread to over twenty-seven countries both within and outside of the Arabian Peninsula.^[12,21] MERS-CoV was associated with possible zoonotic transmission, along with intra-familial transmission, with camels as primary source.

It was reported in 13 pregnant women, and was associated with a medley of adverse clinical outcomes among 10 (77%) of them. Postnatal maternal mortality, premature delivery, and perinatal fetal death were amongst some of the most severe outcomes. Among the three deaths, the mothers expired within 2-3 weeks post-delivery. Among the babies, there was one intrauterine fetal demise, one still birth and one premature delivery at 25 weeks where the neonate died 4 hours post birth.^[22-29] Yet, vertical transmission of MERS-CoV has not been confirmed.^[12]

Complications of COVID-19

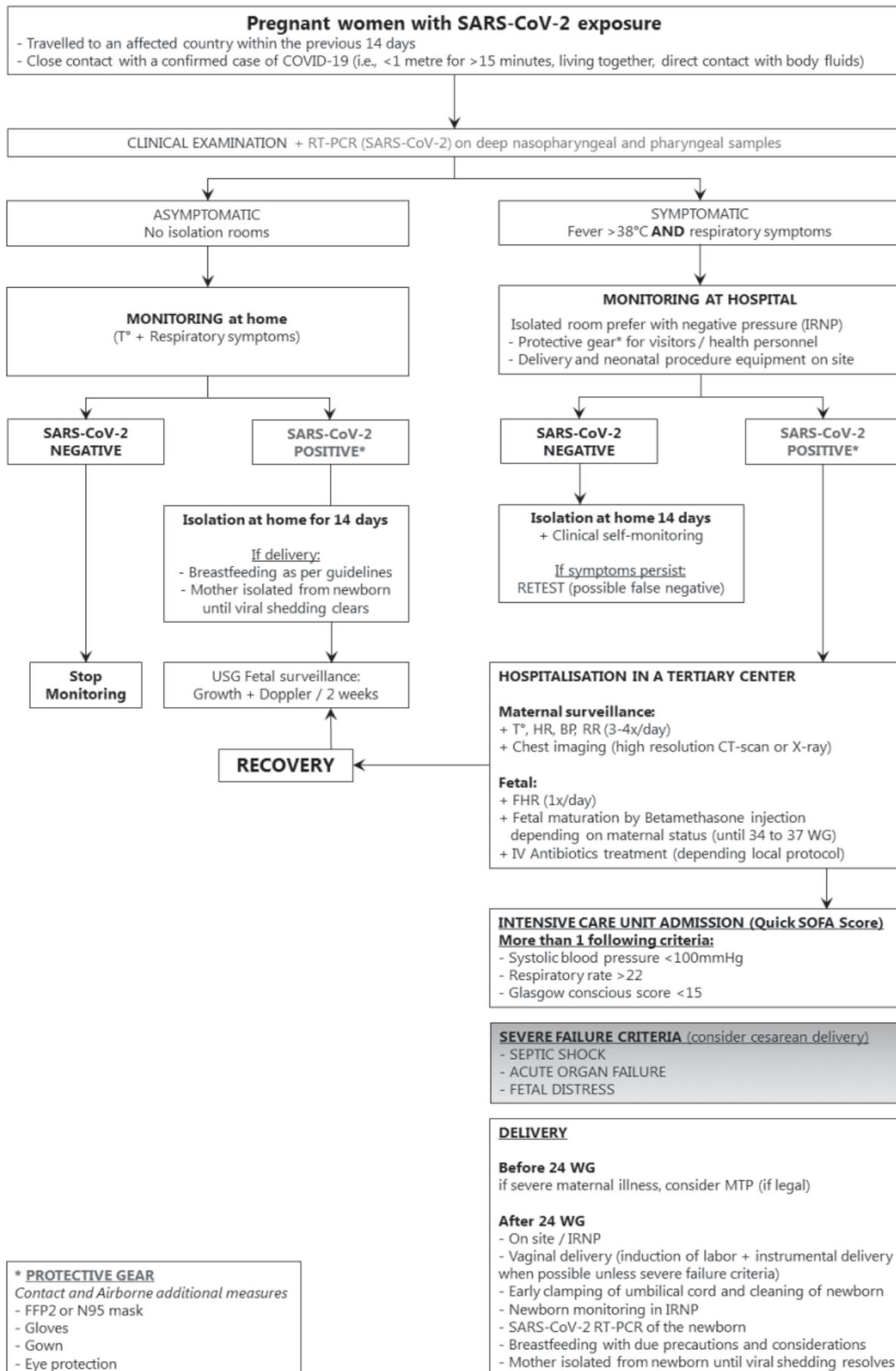
The SARS-CoV-2, a non-segmented enveloped positive-sense RNA virus, is a β -coronavirus.^[30] In a research project, the scientists isolated the genome of a strain of SARS-CoV-2, Wuhan-Hu-1 coronavirus (WHCV), and it was found to be 29.9 kb and reported to contain 16 non-structural proteins (NSP).^[31] Another study suggested that genome of CoVs elicit varying number of open reading frames (ORFs).^[32] To link with this, it has been reported that the virulence and differentiation mechanism of SARS-CoV-2 are attributed to particular mutations in NSP2 and NSP3.^[33]

It is an expeditiously disseminating outbreak that has proven to have compelling effects on global health and medical groundwork. Thus, 6 exquisite requirements of pregnant women ought to be incorporated in formulation of plan of action. COVID-19 principally transmits through the respiratory tract- via aerosolised droplets and respiratory secretions, and direct contact^[34] for a low minimal infectious dose.^[35] However, table 1 summarizes the findings in multiple contemporary studies, which are suggestive of the complications of COVID-19 on pregnant women.

Table 1: Complications of COVID-19 on pregnant women.

Authors	Key Findings
Chen et al. ^[36]	COVID-19 can lead to fetal distress during pregnancy, but doesn't affect neonates.
Chua et al. ^[37]	Non-evident intrauterine vertical transmission of COVID-19 infection Breastfeeding should be refrained in cases of infected or suspected mothers. Mandatory perinatal monitoring should be brought in place for all COVID-19 positive mothers.
Liu et al. ^[38]	No significant aggravation of the course of symptoms or CT features of COVID-19 pneumonia in pregnancy women.
Mardani et al. ^[39]	Neonates born to COVID-19 positive mothers should be put under a two-week isolation and abstinence from breastfeeding. Extensive follow up of such patients is a must, since recurrence of symptoms is a possibility.
Rasmussen et al. ^[40]	Fetal distress and preterm delivery were seen in some newborns.
Wang et al. ^[41]	No report of fetal distress or neonatal infection with COVID-19. COVID-19 indicated for pre-term delivery in infected mothers.
Zhu et al. ^[42]	Perinatal COVID-19 infection produce adverse effects on neonates, causing a wide array of complications like- fetal distress, premature labor, respiratory distress, thrombocytopenia accompanied by abnormal liver function, and even death.
Faveret et al. ^[43]	Miscarriage, fetal growth restriction, preterm birth and maternal mortality were the notable adverse effects reported in pregnant women with COVID-19.
Dong et al. ^[44]	Postpartum elevation of IgM levels in a neonate, delivered via caesarean section, born to a COVID-19 positive mother. Indication of possible intra-uterine vertical transmission of COVID-19.

Here, we analyzed the findings of 9 contemporary studies, out of which 3 claimed that there were no fetal complications of COVID-19 and it affected pregnant women and non-pregnant women alike. While 4 suggested that it does have adverse fetal and neonatal complications. Moreover, in their report, Dong et al presented a case where intrauterine vertical transmission of COVID-19 was possible.^[44] A point that must be stressed upon is that almost all of the mothers that have been included in these studies were in their third trimester, and vertical transmission as well as fetal and neonatal complications, even in previous coronavirus infections, have been prevalent in the



*** PROTECTIVE GEAR**
 Contact and Airborne additional measures
 - FFP2 or N95 mask
 - Gloves
 - Gown
 - Eye protection

first two trimesters and not so much in the third trimester.

Vertical Transmission of COVID-19

As reported by Dong et al^[44], there has been a case where the possibility of vertical transmission has been elicited, where the neonate had an increased IgM level, which indicated involvement of innate immunity of the neonate. Also, reports suggest that 2 neonates, born to COVID-19 infected mothers, tested positive for SARS-CoV-2 postpartum.^[45, 46]

It is suggested that similar to SARS-CoV, SARS-CoV-2 could also be utilising angiotensin-converting enzyme 2 (ACE2) to infect humans hosts.^[47] Moreover, the pathological findings of COVID-19, also similar to SARS, is diffuse alveolar damage with fibrin rich hyaline membranes and a few multinucleated giant cells.^[48,49]

In their extensive research, Valdés et al reported that ACE2 were detected in abundance in the materno-fetal interface, throughout pregnancy.^[50] This can be correlated to the possibility of SARS-CoV-2 utilising the ACE2 receptors present on the materno-fetal interface to vertically transmit from the mother to the fetus. This hypothesis can also explain the neonatal complications as suggested by the above-mentioned studies, due to the immunopathogenesis as a response to the viral encounter.

Obstetric Management in COVID-19

As summarized in Flow chart-1 by Favre et al^[51], the Principle for obstetric management of COVID-19 include rapid detection, isolation and testing, profound preventive measures, regular monitoring of fetus as well as of uterine contractions, peculiar case-to-case delivery planning based on severity of symptoms, and appropriate post-natal measures for preventing infection. Transmission during birth via contact with infectious vaginal secretions and after birth via respiratory secretions is a concern. Thus, a mother who has confirmed COVID-19 or is a person under investigation, should be isolated from her baby until the mother's is free from any possible transmission danger.

Conclusion

COVID-19 has proven to be a deadlier infection as compared to its two coronavirus-caused

infection, SARS and MERS. Pregnancy is a severely physiologically stressful condition and is an indicative state for immunosuppression and thus renders a pregnant woman more susceptible for complications of COVID-19, as compared to a non-pregnant woman. COVID-19 has been found to have adverse effects on both, mother and neonate. Considering the reported fetal complications, it can be hypothesised that vertical transmission of COVID-19 is possible across the materno-fetal interface, by utilisation of ACE2 receptors. Obstetric management of COVID-19 positive pregnant women is critical process, which is essential in procuring a good prognosis for the mother and preventing infection in the neonate. Further, extensive researches are required to determine the viability of the hypothesis for vertical transmission of COVID-19 via the materno-fetal interface.

Conflict of Interest: None

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Calendar of Monthly Clinical Meetings 2020-21

29 th May, 2020	B L Kapoor Hospital
26 th June, 2020	VMMC & Safdarjung Hospital
31 st July, 2020	AIIMS
28 th August, 2020	Army Hospital- Research & Referral
25 th September, 2020	DDU Hospital
23 rd October, 2020	ESI Hospital
27 th November, 2020	MAMC & LNJP Hospital
18 th December, 2020	Sir Ganga Ram Hospital
29 th January, 2021	Dr RML Hospital
26 th February, 2021	UCMS & GTB Hospital
26 th March, 2021	LHMC
23 rd April, 2021	Apollo Hospital

FOGSI GCPR

Good Clinical Practice Recommendation on PREGNANCY WITH COVID-19 Infection

Compiled by Mamta Dagar

Senior Consultant (Ob-Gyn) & Professor GRIPMER, Institute of Obstetrics & Gynaecology, Sir Ganga Ram Hospital, New Delhi

Introduction

Novel coronavirus (SARS-COV-2) is a new strain of coronavirus causing COVID-19, first identified in Wuhan City, China. It was declared as a pandemic by the World Health Organization on 11 March 2020. The pandemic is at different states of spread in different countries. As on 13th of May, it has reached 212 countries with more than 43 lakhs cases and over 2.9 lakh deaths.

India declared the first diagnosed case on 30 January 2020. Till 13th May 2020, there were 47,480 confirmed cases in the country, 2415 deaths and 24,385 people have recovered from the infection.

Maternity healthcare providers and facilities need to prepare for the situation with a view to prevent the consequences of the infection on the mother and her newborn. The COVID-19 strain of

coronavirus infection has a high rate of transmission by droplet and through fomites, though faeco oral transmission has also been reported.

Recent Scientific literature is available on women with pregnancy and COVID-19 infection. In India, a handful of pregnant women have been cared for and delivered with COVID-19 infection.

Good Clinical Practice Recommendation (GCPR) is based on international experience and from the statements and guidance from the Government of India and WHO.

Measures for Pregnant Women to Prevent COVID-19 infection

Pregnant women can protect themselves by the motto "Do the Five". The principle elements of this are:

Home	<ul style="list-style-type: none"> Stay at home as much as possible unless there is a medical need related to development of symptoms of infection or related to pregnancy. Routine antenatal visits are to be deferred. If there is a minor query, it can be sorted out telephonically. Keep the traffic of home visitors including homecare personnel, maids, and staff members to a minimum or avoid completely if possible.
Hands	Washing hands frequently and properly with a soap and water or an alcohol-based hand rub for minimum 20 seconds
Elbow	Covering mouth and nose with their bent elbow, handkerchief or tissue while coughing or sneezing. Then the used tissue should be disposed immediately. This is an important component of respiratory hygiene.
Face	Avoid touching face, eyes, nose and mouth with hands.
Space	Keep a distance of at least 1 meter from the next person outside and in the house.

Precautions for healthcare workers

Healthcare workers are at high risk of acquiring the COVID-19 infection as they are caring for patients. This is because of the contact with large numbers of patients, close contact and procedures where there

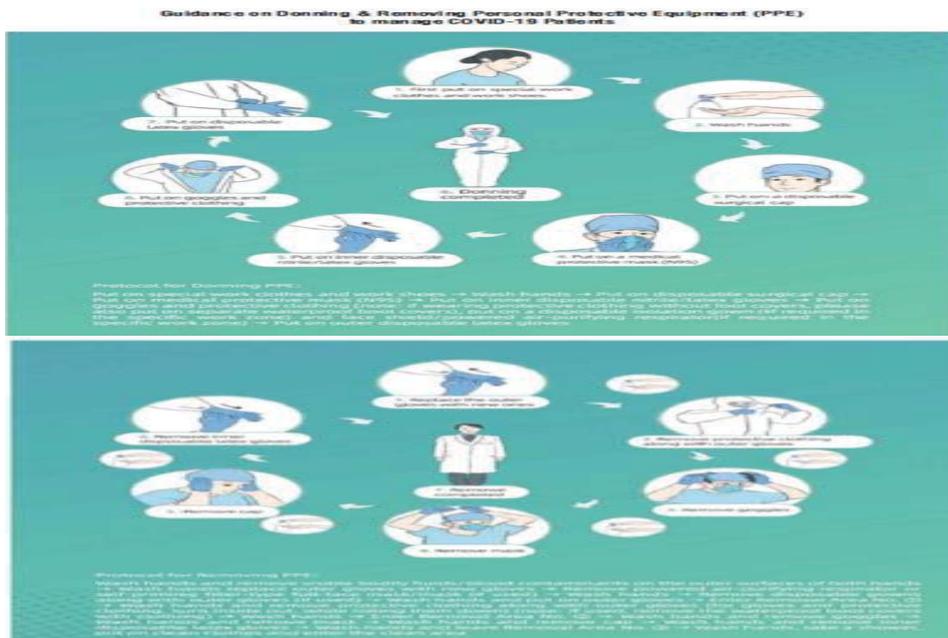
is spray/aerosolization (resuscitation, ventilation) or splash of body fluids (labour, delivery, surgical procedures). The three principles that healthcare workers should follow are distancing, use of appropriate PPE correctly and chemoprophylaxis.

Personal Protective Equipment in relation to COVID-19 infection management

Protection Level	Protective Equipment	Scope of Application
Level I protection	Disposable surgical cap Disposable surgical mask Work uniform Disposable latex gloves and/or disposable isolation clothing	<ul style="list-style-type: none"> Pre examination triage, General Outpatient Department
Level II protection	Disposable surgical cap Medical protective mask (N95) Work uniform Disposable medical protective uniform Disposable latex gloves Goggles	<ul style="list-style-type: none"> Fever outpatient department Non-respiratory specimen examination of suspected/confirmed patients Imaging examination of suspected/confirmed patients
Level III protection	Disposable surgical cap Medical protective mask (N95) Work uniform Disposable medical protective uniform Disposable latex gloves Full face respiratory protective devices or powered air-purifying respirator	<ul style="list-style-type: none"> Cleaning of surgical instruments used with suspected/confirmed patients Intubation, resuscitation of suspected/confirmed patients where there is a risk of spray or splash of respiratory secretions of body fluids or blood Surgery, procedures, delivery of suspected / confirmed patients Autopsy of suspected/confirmed patients

Personal Protective Equipment (PPE)

The procedure of wearing (donning) and removing (doffing) of the PPE should be strictly followed as has been illustrated in the following two figures.



Chemoprophylaxis

In addition to the above two measures, the Indian Council of Medical Research (ICMR) also recommends the use of hydroxychloroquine as prophylaxis for asymptomatic healthcare workers caring for suspected or confirmed COVID-19 infected patients. The recommended regimen is to take the tablet of 400 mg hydroxychloroquine twice a day on day 1 and then once weekly for 7 weeks. The medicine should be taken with meals. It is contraindicated in case of known sensitivity to the drug or if a healthcare worker suffers from

G6PD deficiency, heart disease or retinopathy. An ECG should preferably be done before starting hydroxychloroquine to rule out cardiac problem.

Clinical Presentation and Effects of COVID-19 on the Mother

The mean incubation period (from exposure to the appearance of clinical features) is 5 to 7 days. Most people who are infected will show features latest by 11 days of exposure. Pregnant women are no more likely to get infected than the general population,

also pregnant women do not have worse outcomes or consequences of infection with COVID-19 than the general population. The majority of people (pregnant and general population) may be asymptomatic or present with respiratory symptoms of COVID-19 infection. Most pregnant women will have mild to moderate flu-like symptoms of cough, sore throat, and fever. Few may have difficulty in breathing or shortness of breath. These have been classified as features of severe acute respiratory illness (SARI) by the WHO. Pregnant women have co-morbid conditions such as diabetes, hypertension, obesity, respiratory disease or advanced age are more likely to have a severe form of respiratory disease. As pregnancy is known to be a hypercoagulable state, and emerging evidence suggests that individuals admitted to hospital with COVID-19 are also hypercoagulable, it follows that infection with COVID-19 is likely to be associated with an increased risk of maternal venous thromboembolism (VTE).

Clinical Classification of Covid 19 infection (China)

Mild disease: Clinical symptoms are mild and evidence of pneumonia on imaging

Moderate: Fever + respiratory symptoms + pneumonia manifestations on imaging

Severe: Respiratory rate > 30 / min, SpO₂ < or = 93% at rest, paO₂/FiO₂ < 300 mmHg, Those with 50% lesions progression within 24 to 48 hours of imaging

Critical: Respiratory failure requiring mechanical ventilation, presence of shock, other organ failure that requires ICU care

Effects of COVID-19 infection on the fetus

Preliminary research has suggested that the infection is not transmitted from the mother

to child by placental transfer. However, there is emerging evidence that now suggests that vertical transmission is probable.

Testing for COVID-19 in Pregnancy

Indications

The currently recommended indications for testing for the general population (which also apply to pregnant women) as per the ICMR given on 09 April 2020 are found in executive summary.

Test methods and facilities

The current diagnostic approach to confirm the diagnosis of COVID-19 infection in India is to detect the presence of viral nucleic acid by real time reverse-transcription polymerase chain reaction (RT-PCR). The cost of the test has been capped in private labs at Rs. 4500/-. Report is generally be available in 24 hours.

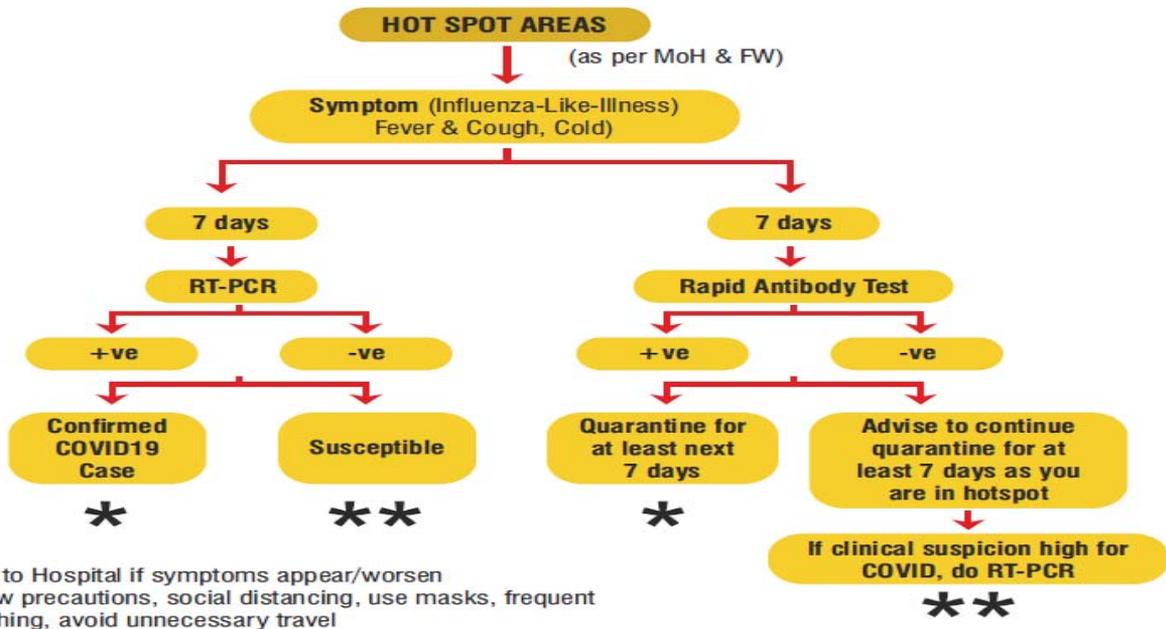
At present, the RT-PCR test is recommended by the ICMR. However, false negative tests are known to occur to the rate of 10-30%. The results of RTPCR are dependent heavily on viral load and nature of the specimen (Bronchoalveolar lavage fluid 93%, Sputum 72%, Nasopharyngeal swab 63%, Pharyngeal swab 32%, Feces 29% Blood 1%).

Serological testing is available in India. It is faster and cheaper as compared to RT-PCR. At a population level, serological testing may be more feasible to see the prevalence. There are various types of test kits available for detecting the immune response to COVID-19 infection. The possible results, interpretation and action are summarized below.

Finding	IgG negative, IgM negative	IgM positive, IgG negative	IgM positive, IgG positive	IgM negative, IgG positive
Interpretation	No exposure to infection or exposure to infection has occurred less than 5-7 days ago	Recent exposure to infection (7 to 14 days ago)	Exposure to infection was about 14 to 21 days ago	Exposure to infection was more than 21 days ago and immunity has developed
Clinical status and steps	No medical treatment needed as they are usually healthy or asymptomatic. If symptoms develop, test should be repeated.	Confirm the diagnosis by RT-PCR of nasopharyngeal swab. Medical care depends on clinical symptoms.	Confirm the diagnosis by RT-PCR of nasopharyngeal swab. Usually they are on the road to recovery and will not need medical care.	These are individuals who have recovered from a clinical or sub-clinical infection. They do not need medical care.
Risk of transmission to others	Not infectious, but can get infected themselves if exposed to a carrier or infected person. They should take all precautions to avoid getting infected.	This individual is infectious to others and needs to be isolated.	Risk of transmission of infection from these individuals is low especially if they are asymptomatic.	They are not likely to be carriers or transmit infection.

The ICMR protocol is outlined below. The recommended test for clinical confirmation is the

RT-PCR. The serological tests are a supplementary tool to be used only for specific areas.



Other investigations

Other laboratory findings that have been seen with COVID-19 infection are leucopenia, lymphocytopenia, mild thrombocytopenia, mild elevation of liver enzymes and other acute infection markers. Some laboratory markers such as elevated levels of ferritin, C-Reactive Protein, Procalcitonin and a NLR (N:L ratio) i.e. absolute neutrophil count: absolute lymphocyte count > 3.5 predict poor outcomes for patients in critical care.

CT scan Chest and X-Ray Chest usually show patterns consistent with atypical pneumonia. The typical findings are bilateral multifocal consolidations or ground glass opacities which may progress to involve the entire lung and small pleural effusions. Imaging results vary and they may not always correlate with the clinical picture. X-Rays are more practicable than CT scans in our country and could be the primary imaging modality.

Notification of COVID-19 cases

It shall be mandatory for all hospitals (Government and Private), Medical officers in Government health institutions and registered Private Medical Practitioners including AYUSH Practitioners, to notify such person(s) with COVID-19 to concerned district surveillance unit.

Quarantine for pregnant women in COVID-19 pandemic

A contact in the context of COVID-19 is:

- A person living in the same household as a COVID-19 case
- A person having had direct physical contact with a COVID-19 case or his/her infectious secretions without recommended personal protective equipment (PPE) or with a possible breach of PPE.
- A person who was in a closed environment or had face to face contact with a COVID-19 case at a distance of within 1 meter including air travel.

In India, all suspected (awaiting test results) and confirmed cases of COVID-19 disease are currently being isolated and managed in a hospital setting with the intent to break the chain of transmission. The scope of home isolation has been extended to individuals with very mild to mild symptoms of infection as certified by the treating medical officer. Certain criteria should be fulfilled such as having facilities at one’s own residence for isolation for the patient and facilities for quarantine for other family members.

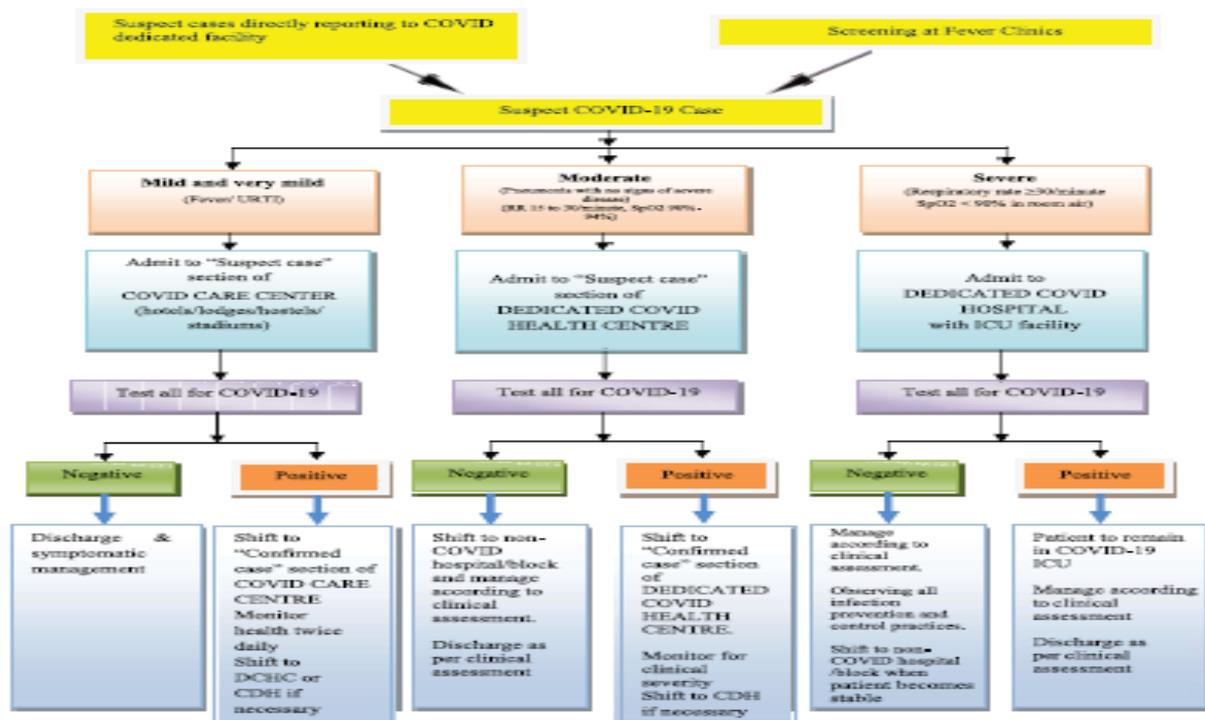
Arrangements in existing healthcare facilities to manage COVID-19 exposed and infected pregnant women

The current recommendation is to organize public

and private health care essentially into non-COVID and COVID facilities. Further, COVID facilities would be designated to represent various levels of care as follows.

	Purpose	Staffing and Facilities
Fever clinics COVID Care Centres (CCC)	Outpatient assessment Observation and treatment of very mild or mild cases	Existing quarantine facilities or makeshift facility such as a hostel, stadium, lodges etc. Functioning hospitals or part of hospitals may also be used, but only as a last resort as these facilities are better utilized for DCHC and DCH. These centres may be manned by AYUSH doctors working under the guidance of an allopathic doctor
Dedicated COVID Health Centre (DCHC)	Observation and treatment of moderate cases or mild cases with high risk factors such as old age, diabetes, heart disease, respiratory disease.	Existing hospital with beds where there is facility to provide oxygen continuously. Allopathic doctors and postgraduate trainees.
Dedicated COVID Hospital (DCH)	Observation and treatment of severe cases	Hospitals with oxygen, intensive care and ventilators being available. These centers should also have facilities for maternity care and other subspecialties. Allopathic doctors and postgraduate trainees.

Algorithm for isolation of suspect/confirmed cases of COVID-19



Every pregnant woman should be triaged at entry and then allotted into one of the zones depending on the presentation.

Infected	Potentially infected	Clean
<ul style="list-style-type: none"> Tested and shown to be positive for COVID-19 	<ul style="list-style-type: none"> Symptoms of SARI Contact with infected individual Travel abroad in the last 14 days Healthcare worker caring for COVID-19 infected individuals Test result is awaited Residing in hotspot/cluster/containment zone/with evacuees from this areas 	<ul style="list-style-type: none"> No symptoms of SARI No contact with infected individual No travel history Not residing in hotspot/cluster/containment zone/with evacuees from this areas

Telemedicine during the pandemic

Telemedicine has been permitted by the Medical Council of India at the present time.

- The same ethical and professional standards should be practiced as per usual practice.
- Various forms of communication can be used as per the choice of both parties. This may be in the form of video (specialized telemedicine platforms or general platforms such as WhatsApp, Zoom, FacebookLive, Skype, etc.), audio (telephone or any other voice-over-Internet-protocol) or written communication (email, messages on various applications).
- Prescriptions should be provided in a standard format.
- Medications are grouped as per the mode of consultation, feasibility and safety of telemedicine.
- Consent is implied when the patient initiates a consultation with the doctor.
- Documentation and maintenance of records may be in physical or electronic form.

Termination of pregnancy (MTP), sexual and reproductive healthcare in times of COVID-19

Abortion care is essential healthcare. It is critical to ensure that women who seek abortion and family planning do not suffer from lack of access.

- It should be noted that suspected or confirmed COVID-19 infection by itself is not an indication for termination of pregnancy.
- Consultation, counseling and prescription of investigations (blood and ultrasound) can be provided by telemedicine. They can be reviewed remotely before in-person visit.
- There is no requirement of mandatory testing for COVID-19 infection in the absence of clinical suspicion for medical or surgical MTP.
- If there is suspicion or confirmed COVID-19 infection, advice the woman to go to a designated COVID facility. The procedure should be deferred for 14 days.

- Medicated abortion (MTP pills) cannot be prescribed by telemedicine.
- Emergency Contraceptive Pills can be prescribed by telemedicine as they reduce the chance of requiring MTP.

Routine Antenatal Care during the pandemic

Antenatal Care Visits

Following the principles of social distancing, it is advisable to minimize the number of visits.

For the low risk, asymptomatic and uninfected woman, at present, the recommended strategy for antenatal care is to conduct antenatal care visits by phone or video call supplemented with home blood pressure monitoring.

Questions, counselling and minor ailments can be addressed remotely. An ultrasound is advised at 12-13 weeks and at 18-22 weeks as outlined below. Pregnancy visits can be timed with these sonographies. The next visit can be at about 30 to 32 weeks. Vaccinations and antenatal profile (blood and other investigations) can be planned during these visits. Growth scans in the last trimester are advised or performed only if indicated. Women are advised to note fetal movements every day. For women who have high risk factors, the guidance of the Health Care Provider is needed.

Assessment of Pregnant women (not in labour) with COVID-19 infection

If a pregnant woman is confirmed by tests to have COVID-19 infection, the first step is to assess the systemic status.

- 1) If asymptomatic, the woman should be quarantined in the hospital as per current practice. The measures to be taken are discussed in the previous section. If the numbers increase, the Government guidelines on hospital admission for quarantine may change. She should self monitor and report if symptoms arise.
- 2) If symptomatic, a decision needs to be made as to the requirement of hospitalization or further intensive care.

Hospitalization	Intensive Care (to be managed by critical care specialist) (17)
<ul style="list-style-type: none"> ·In a very mild or mild disease if the criteria for home isolation (outlined earlier) are not met, hospitalization is necessary. ·Worsening of features of an individual who was in home isolation. ·Presentation with moderate or severe illness. 	Pregnant women who meet any of the following criteria: <ul style="list-style-type: none"> • respiratory rate > 30 breaths/min; • oxygen saturation < or = 93% at a rest; • arterial partial pressure of oxygen (PaO₂)/oxygen concentration (FiO₂) < 300 mm Hg • Patients with > 50% lesions progression within 24 to 48 hours in lung imaging • Quick Sequential Organ Failure Assessment Score (qSOFA) score can be a useful adjunct to decision making for ICU management.

A quick bedside assessment tool is also usable for sepsis (typically for bacterial infections) screening in triage called the quick SOFA (qSOFA) score. It includes 1 point for each of 3 criteria.

qSOFA SCORE				Score ≥ 2 is suggestive of sepsis and needs intensive care
Number	Criteria		Point	
1.	Respiratory rate	≥ 22 breaths/min	1	
2.	Mental status	Altered	1	
3.	Systolic Blood pressure	≤ 100 mm Hg	1	

Medical management and drugs used in the treatment of COVID-19 infection in pregnancy

Supportive therapy for COVID-19 infections should include rest, oxygen supplementation, uid management and nutritional care as needed. The treatment of COVID-19 viral infection has been attempted by two approaches. The first approach is the use of a combination of Hydroxychloroquine and Azithromycin. These drugs are readily available and cost-effective in India. The other approach has been to use antiviral drugs, some of which are not yet available in India.

Hydroxychloroquine

The regimen used is hydroxychloroquine in a dose of 600 mg (200 mg thrice a day with meals) and Azithromycin (500 mg once a day) for 10 days. As such, both these drugs have been used in pregnancy and during breastfeeding without significant effects on the mother or fetus. Alternative dosage regimens for hydroxychloroquine are to give 400 mg twice a day on day 1 and then 400 mg once a day for the next four days.

Chloroquine can also be used as an alternative. The dose is 500 mg twice a day for 7 days. Some

authorities recommend that azithromycin should be added only where there is a clinical suspicion of superadded bacterial infection.

Antiviral therapy

Lopinavir-ritonavir was the first antiviral combination used in an attempt to treat COVID-19 infection. This may be considered as a possible line of treatment for those who have chronic disease, immunocompromise or uncontrolled diabetes.

Other agents such as Remdesivir, Favipriavir are being evaluated in randomized trials.

At present, data on use of Oseltamavir in conjunction with hydroxychloroquine is limited.

Other Drugs

NSAIDs: Paracetamol is the preferred drug for fever and myalgia. Ibuprofen and other NSAIDs may be avoided because of fetal concerns.

Antenatal Steroids (fetal maturity): Steroids are recommended for enhancing fetal lung maturity in situations where preterm delivery is likely between 24 to 34 weeks of gestation.

Antihypertensives: ACE (Angiotensin Converting Enzyme) inhibitors and ARBs (Angiotensin Receptor

Blockers) are not to be used in pregnancy due to their known deleterious effects on the fetus.

Antibiotics: If there is a suspicion of secondary bacterial infection, appropriate antibiotics which are considered safe in pregnancy should be added.

Oxygen: If there is difficulty in breathing, oxygen supplementation by nasal prongs or mask may be added. High flow nasal oxygen at 4 to 6 liters per minute should be immediately administered. At this point, there should be a reevaluation of the patient’s status and consideration should be given to the need for intensive care.

Intensive Care Management

It is estimated that about 15% of COVID-19 infected individuals will need care in hospital and 5% will need intensive care.

If a woman is identified to need intensive care, it should be done in conjunction with a team of ICU experts. Caring for critically ill pregnant women patients with COVID -19 is based on management of viral pneumonia with respiratory failure with additional precautions to reduce risk of transmission. The principle guidelines for ARDS in these circumstances include:

- Conservative Intravenous fluid strategies
- Empirical early antibiotic for possible bacterial pneumonia
- Early invasive ventilation may be needed

- Lung protective ventilation strategies
- Periodic prone positioning during mechanical ventilation. There is little evidence on prone positioning in pregnant women.
- Pregnant women may benefit from being placed in the lateral decubitus position.
- Extracorporeal membrane oxygenation where needed.

Plasma Therapy

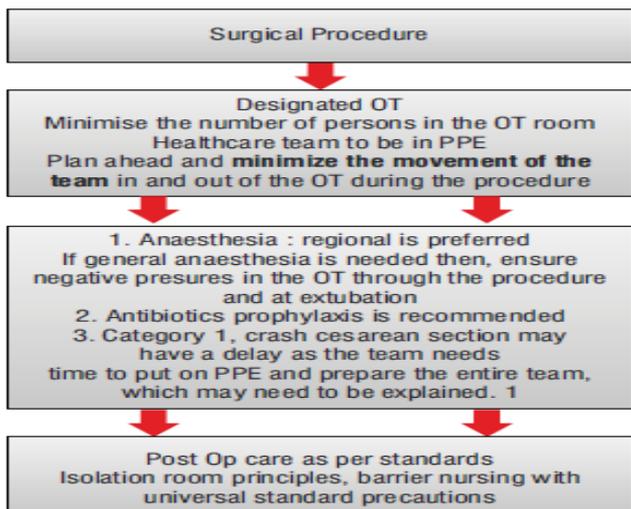
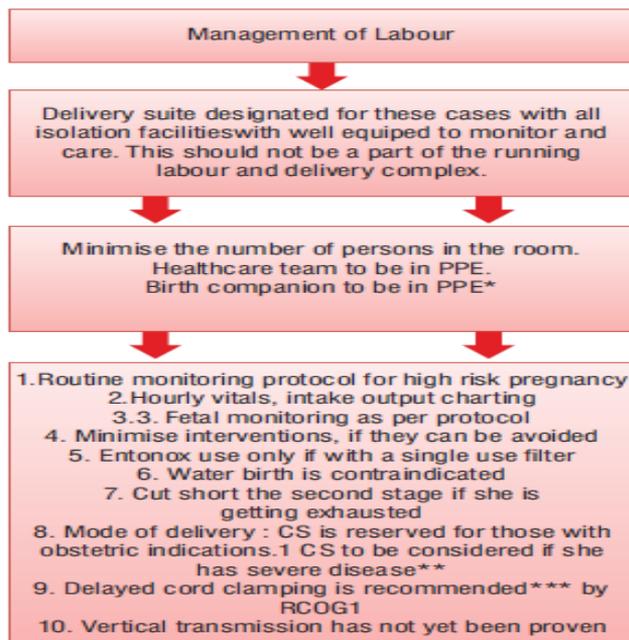
The ICMR emphasizes that this is an experimental treatment to be performed only in settings of a clinical trial and not for routine use, even for individuals in critical care with COVID-19 infection.

Vaccine

At present, a number of organizations in the public and private sector are working towards the development of a vaccine. It is estimated that a vaccine would be available to use only after 6-12 months.

Management of Labor and Delivery in women with COVID-19 infection

In all circumstances, maternity care providers should continue to provide client-centred, respectful skilled care and support. Birth attendants should be limited to one named contact.

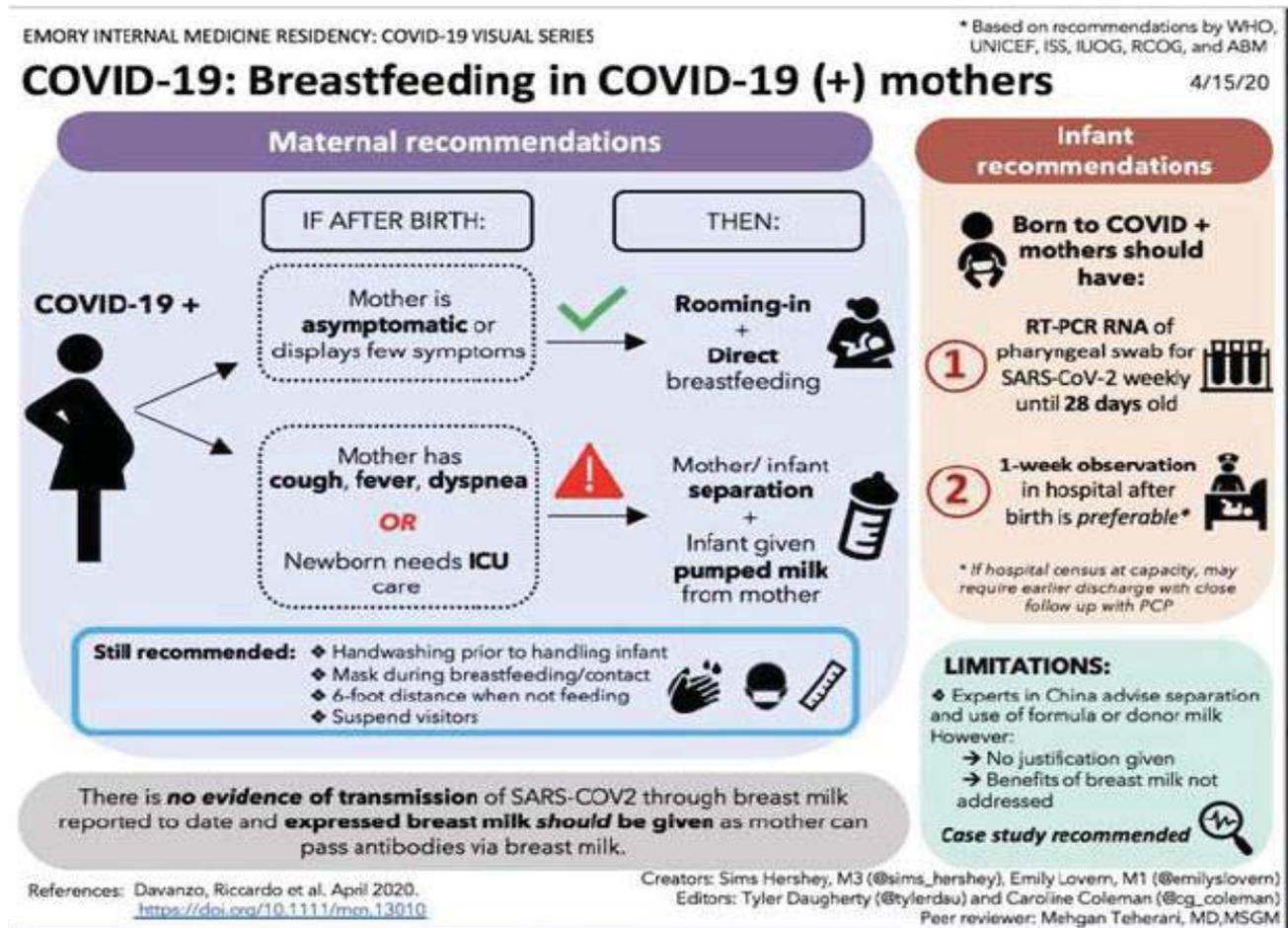


* Birth companion is an important support system of these women, and hence should not be removed, but given adequate PPE to protect them. ** CS is reserved for those with obstetric indications by the RCOG guideline, but data from China shows a majority having a cesarean section. ***Delayed cord clamping is advocated as vertical transmission is not been proven, and benefits to baby are huge

Breastfeeding and the COVID-19 infected mother

As present knowledge stands, there is no evidence

that COVID-19 is secreted in breast milk. The infographic below is a useful learning and training tool.



Postnatal Care and Advice to the mother infected with COVID-19

Postnatal care of the mother infected with COVID-19 should include continued medical evaluation for respiratory status and symptoms and standard practices of routine postnatal care. She should be encouraged to maintain the good practices of hygiene related to the puerperium and hand hygiene. Advice should include management of engorged breasts when feeding has not been established and measures to enhance breastfeeding after the isolation period is completed. She should consume a healthy, nutritious diet to recover from the infection and build immunity.

The mother who is recovering from an acute illness and/or is isolated from the infant may be at risk for

developing anxiety, postpartum depression and other mental health issues. She should be offered counseling and psychological support.

FOGSI Registry

FOGSI is trying to track every pregnancy and delivery process of COVID-19 affected women and learn about the problems faced and their on-ground solutions.

The format is available on the FOGSI website (<https://www.fogsi.org/fogsi-national-registry-on-covid-19-infection-inpregnancy>) and FOGSI urges maternity care providers to report cases as they occur.

Executive Summary

EXECUTIVE SUMMARY



Measures for Pregnant Women to Prevent COVID-19 Infection

Social Distancing – could be the single most important intervention at population level
Do the Five – Staying at home, Hand hygiene, Respiratory hygiene, Avoiding touching the face and Keeping distance should be practiced. Wearing a mask is recommended.



Precautions for healthcare workers (HCW)

HCW are at high risk of getting infected. Precautions are necessary to protect themselves and prevent spread to others.
Distancing – where possible, HCW should keep a distance and practice hand hygiene
Personal Protective Equipment (PPE) – use should be according to clinical situation. Covering of all surfaces especially hands and face is vital. Proper technique to wear and remove PPE is essential.
Chemoprophylaxis – is recommended with Hydroxychloroquine only for HCW with known contact of COVID-19 positive patients. In case of accidental exposure, complete protocol should be followed.



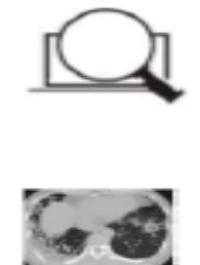
Clinical Presentation and maternal effects of COVID-19 in Pregnancy

A history of travel abroad, contact and respiratory symptoms should be elicited at every clinical interaction. Most pregnant women will present with mild symptoms and have a similar course to other adults with COVID-19 infection. Maternal diseases may get aggravated if associated with co-morbidities. COVID-19 infection could exaggerate the hypercoagulable state. Mental health issues and domestic violence should be considered in assessing the woman.



Effects of COVID-19 infection on the fetus

There is emerging evidence from immunological assessment that in-utero transplacental infection to the fetus may occur. The virus has not been isolated in amniotic fluid or vaginal secretions. The neonatal effects seem to be minimal.



Testing for COVID-19 in Pregnancy

The criteria for testing non-pregnant persons are applicable to pregnant women. In addition, there are some special criteria for testing with regards to pregnancy. It is essentially meant for acute respiratory illness with exposure, travel, contact or a HCW or requiring hospitalization. Asymptomatic individuals should be tested between 5 to 14 days of exposure to a known contact. Symptomatic individuals with influenza like illness from hotspots should be tested by RT-PCR (within 7 days) or serology (after 7 days). Pregnant women residing in cluster/containment areas or in large migration gatherings/evacuees centre from hotspot districts presenting in labour or likely to deliver in next 5 days should be tested even if asymptomatic. There is no recommendation for testing every pregnant woman.
Test methods and facilities – presently the RT-PCR test from nasopharyngeal swab is used for diagnosis.
Other investigations – supportive investigations include blood studies for infection and systemic assessment and imaging by X-ray or CT scan chest with abdominal shielding

Notification of COVID-19 cases is mandatory

Quarantine for pregnant women – should be followed as per general population depending on contact tracing or diagnosis.



Arrangements in existing healthcare facilities

COVID and non-COVID facilities need to be defined. There has to be comprehensive maternity services available at COVID hospitals. COVID positive mothers should be delivered in a separate and dedicated Labour Room and Operation Theatre. In case of an emergency where these facilities are not available, the LR and OT should be properly fumigated. Non-COVID hospitals need to make changes such as triage, checklist and referral pathways to minimize accidental infection transmission risk.



COVID Checklist Tool

A checklist should be used to identify suspect patients. They should be referred for testing. This may not be a foolproof method but in the absence of rapid testing, it is a useful approach.



Termination of pregnancy (MTP), sexual and reproductive healthcare

services are time sensitive and their provision is essential during the pandemic for all women.



Antenatal Care

Visits should be optimized and timed. PPE, distancing and hygiene precautions are necessary. Clinic organization is important to reduce transmission risk. Clinic fomites should be disinfected. At the end of the day, the room should be disinfected or fumigated. Telemedicine should be used as appropriate.



Obstetric Ultrasound

Due to prolonged examination time, small room size and proximity, transmission risk is high with obstetric ultrasound. Minimum number of probes should be used. In a hospitalized woman, bedside ultrasound is preferable. Ultrasound machine and fomites should be disinfected. The probe should be washed, dried and disinfected. At the end of the day, the room should be disinfected or fumigated.



Assessment of Pregnant women (not in labour)

Recognizing the critically ill woman – Most women will not need hospitalization or critical care. Tachypnoea (>30/min), hypoxia (SpO2 < or = 93%) and imaging showing > 50% lung involvement indicate a need for critical care.

	<p>Medical management and drugs used in the treatment of COVID-19 infection in pregnancy Hydroxychloroquine 600 mg (200 mg thrice a day with meals) and Azithromycin (500 mg once a day) for 10 days has been used successfully. Antiviral therapy (Lopinavir + Ritonavir or Oseltamivir) may be used in high risk groups (immunocompromised, chronic disease, uncontrolled diabetes). Other supportive care should include rest, supplemental oxygen and paracetamol. Plasma therapy is being assessed in trials.</p>
	<p>Management of Labour and Delivery in women with COVID-19 infection There is no rationale to induce labour or deliver a woman early because of COVID-19 infection. Decisions regarding route of delivery should be as per standard obstetric practice or as per the maternal condition.</p>
	<p>Labour Analgesia and Anesthesia in Pregnant Women with COVID-19 infection Regional analgesia and anesthesia can be used in women with COVID-19 infection. Specialized techniques can be adopted for general anesthesia.</p>
	<p>Newborn care should be practiced as per routine. At present, testing is recommended if the mother has COVID-19 infection or if the baby is symptomatic. Breastfeeding is encouraged with good hygiene practices.</p>
	<p>Cleaning, maintenance of facilities and medical equipment should be done with adequate PPE to the HCW. 1% sodium hypochlorite solution with contact time of 30 minutes can be used.</p>
	<p>Postnatal Care and Advice to the mother infected with COVID-19 should follow routine practice. If the woman is isolated from the neonate, she should be offered psychological assessment and support.</p>
	<p>Diet for the pregnant woman and COVID-19 infection should be as per routine. There are no special diets. Rumors related to diet should be dispelled. A nutritious diet helps to build immunity.</p>
	<p>Training and managing the healthcare cadre is essential to prevent them from getting infected. Training should include donning and doffing. Duty allocation and duration of shifts should be regulated. It is important to keep up morale.</p>

Information Sources for Healthcare providers and the Public

ICMR (<https://icmr.nic.in/content/covid-19>) and Ministry of Health and Family Welfare (<https://www.mohfw.gov.in/>) are the most important sources for information for healthcare providers and the public.

FOGSI (<https://www.fogsi.org/>) regularly provide advisories and guidelines regarding the pandemic relevant to specialties.

Information about COVID-19 can also be availed by calling the national helpline number 011-23978046 or 1075, by email on ncov2019@gov.in or on chat on <https://wa.me/919013151515>.

Aarogya Setu is a mobile application developed by the Government of India to connect essential health services and information about COVID-19.

Joint RCOG, BSGE and BGCS Guidance for the Management of Abnormal Uterine Bleeding in the Evolving Coronavirus (COVID-19) (Pandemic 31 March 2020)

Compiled by Mala Srivastava

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This consensus statement provides a framework for the management of women with abnormal uterine bleeding (heavy menstrual bleeding (HMB), intermenstrual (IMB), postmenopausal bleeding (PMB) or post coital bleeding (PCB)) during the current pandemic. These are frequent symptoms that raise concerns about gynaecological cancer.

It provides national guidance for contingency planning for individual health care practitioners, service managers and commissioners to mitigate the effects of reductions in human and physical resources on our service.

Our objectives are:

1. To reduce the risk of person to person (horizontal) transmission of the virus SARS-CoV-2, which causes COVID-19.
2. To make the best use of very limited human and physical resources.

Heavy Menstrual Bleeding

- Women with HMB should initially be managed by remote communication. They should be reassured that the risk of malignancy is negligible 1.
- A relevant clinical history should be taken to elucidate the severity of the symptoms, the possibility of anaemia and the likely cause.
- If there are no symptoms of anaemia, or if present anaemia is likely to be mild, oral medication should be prescribed after exclusion of contraindications 2.
- Women should be referred to secondary care for further management if:
 - o The HMB is torrential and / or prolonged.
 - o Ongoing HMB that has been resistant to NICE recommended oral treatments and is considered unmanageable by the woman.
 - o Severe anaemia is suspected.

- Women referred to secondary care should have the following examination and investigations:
 - o A pelvic examination to identify rectifiable causes (e.g. prolapsed cervical fibroid) and detect significant uterine fibroids and genital tract cancer.
 - o An endometrial biopsy to exclude endometrial cancer or atypical endometrial hyperplasia.
 - o A full blood count to diagnose anaemia.

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- Women referred to secondary care should be managed according to the likely cause and their preferences. Consider:
 1. Oral or intravenous iron infusion according to the severity of the anaemia and associated symptoms.
 2. Tranexamic acid and a course of high dose oral progestogens to rapidly suppress acute bleeding.
 3. NICE recommended medical treatments that have not been used including the levonorgestrel-releasing intrauterine system.
 4. Gonadotrophin releasing hormone (GnRH) analogues for refractory bleeding despite use of recommended NICE medical treatments and / or in the presence of significant uterine fibroids. Consider moving to a 3-month duration injection once patient tolerance of GnRH analogues has been established or delivery via the nasal route (nafarelin acetate spray). Addback hormone replacement therapy (HRT) should be considered, once HMB is controlled if GnRH analogue treatment is to be continued beyond 3-6 months.
- Endometrial hyperplasia and cancer should be managed according to local protocols and national guidance.

Intermenstrual Bleeding

- Women with IMB should initially be managed by remote communication. Women should be reassured that IMB is common and symptoms often spontaneously resolve and that underlying cancer is rare¹.
- A relevant clinical history should be taken to elucidate the severity of the symptoms and the likely cause. Pregnancy should be excluded.
- Where the likelihood of sexually transmitted infection or genital tract cancer is considered negligible, then management options to discuss include:
 - Reassurance.
 - Observation with phone follow up to see if the IMB subsides.
 - Change in hormonal contraceptives in current users.
 - Trial of hormonal contraceptives in non-users.
- Women should only be asked to come for a pelvic examination, preferably in primary care, if:
 - There is a risk of sexually transmitted infection (take genital tract swabs).
 - Cervical cancer is suspected because of associated post-coital bleeding and / or offensive vaginal discharge.

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- Women should be referred to secondary care for further investigation if:
 - Cervical cancer is suspected on pelvic examination.
 - Endometrial cancer is suspected because of persistent IMB (i.e. occurring for at least 3 consecutive months) in women over 40 years of age who are not using hormonal contraceptives.
- Women referred to secondary care may have the following investigations:
 - A cervical biopsy.
 - A pelvic ultrasound scan and blind endometrial biopsy.

Postmenopausal bleeding

- PMB is a red flag symptom because 5 - 10% of women will have endometrial cancer³. Clinical management of PMB should be focused on

identifying cancer.

- Women with PMB should initially be managed by remote communication to:
 - Confirm the symptom.
 - o Determine if they have any symptoms of COVID-19.
 - Be informed that a 2 week wait referral to secondary care will be made.
 - Highlight women who have suspected or confirmed COVID-19 and inform them that they will not be seen in secondary care until they are no longer infectious (14 days from the onset of symptoms) to avoid horizontal transmission.
 - Assess whether hospital assessment can be deferred for COVID-19 vulnerable patients (for example but not limited to women above 70 years old and women with underlying health conditions) to reduce the risk of horizontal transmission. This risk needs to be balanced against the risk of delay in diagnosis or exclusion of a gynaecological cancer on a case by case basis.

• In secondary care:

- A speculum examination should be performed because a normal cervix on speculum examination in women who have a negative cervical smear excludes cervical cancer.
 - o Measurement of the endometrial thickness (ET) by transvaginal ultrasound scan (TVS) should be the first line test in accordance with local protocols and national guidance⁴.
- An endometrial thickness (ET) of < 4mm on TVS excludes endometrial cancer, and these women can be discharged⁴.
- Blind endometrial biopsy alone should be preferred to hysteroscopy if the ET is > 4 mm⁴ because hysteroscopy requires specific skills and greater use of human and material resources, including cleaning and sterilising of equipment.

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A blind endometrial biopsy that produces an "insufficient sample" should be considered as normal provided the biopsy device was inserted more than 4 cm beyond the cervical canal⁴, although this conclusion should be considered on a case by case basis (e.g. where the endometrium

is markedly thickened, bleeding is heavy and / or there are increased risk factors for endometrial cancer).

Hysteroscopy may be necessary as part of diagnostic work up for suspected endometrial cancer where a blind endometrial biopsy has failed or is non-diagnostic, or to obtain a directed biopsy or conduct an endometrial polypectomy. These decisions should be made on a case by case basis.

Hysteroscopy, blind endometrial biopsy and polypectomy using electrosurgical or tissue removal systems do not pose an increased risk of transmission of SARS-CoV-2 to health care workers because the virus has not been identified in the genital tract in women with COVID-19. Best practice should be followed to minimise contamination from blood, urine, genital tract fluids and faeces when conducting any genital tract procedure.

Infection control practices, including the use of personal protective equipment (PPE) during diagnostic and operative hysteroscopy procedures should comply with local and national protocols.

Whilst all women should be offered a choice of anaesthesia and treatment settings for hysteroscopic procedures, they should be aware that an outpatient setting avoids hospital admission, thereby minimising the risk of exposure to SARS-CoV-2. Where an inpatient procedure is to be undertaken, consider the use of conscious sedation and regional anaesthesia rather than general anaesthesia to prevent the generation of aerosols. Consideration should be given to insertion of a LNG-IUS at the time of blind endometrial biopsy or hysteroscopy where there is considered a high risk of endometrial hyperplasia or cancer. This decision should be made on a case by case basis.

Minimise the number of attendances at health care facilities for women with postmenopausal bleeding, by offering TVS, clinical history taking, pelvic examination, outpatient hysteroscopy and / or blind endometrial biopsy at the same visit.

Defer endometrial surveillance for non-atypical endometrial hyperplasia in women without abnormal uterine bleeding because the risk of

progression to endometrial cancer is low. Women in whom a cancer is diagnosed should be referred to a gynaecological oncology MDT for further management.

Women in whom a cancer is diagnosed should be sensitively informed of the diagnosis. Ideally, this should be in a face to face consultation. However, the extent of the pandemic and patient factors may make it necessary to do so in a non-face-to-face consultation.

Post Coital Bleeding

- Women with PCB should initially be managed by remote communication to: Reassure them that a cervical cancer is extremely unlikely if they have an in-date negative cervical screening test.

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Elucidate whether they have any risk factors for a sexually transmitted disease. If such risk factors exist, they should be seen in primary care or a Sexual Health Clinic for further investigation and management. o Women who do not have an in-date negative cervical screening test need to be seen for a speculum examination to exclude cervical cancer and for a smear to be taken; depending on local circumstances, this could be in primary or secondary care.

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Gynaecological Surgeries: Which cases to operate and how? How much is endoscopy feasible during this Pandemic

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1. COVID 19 Situation

I would like to commence by lauding our government's decision to impose nationwide lockdown at an early stage of COVID 19 pandemic.

This is not just a public health crisis. It's a crisis that will touch every sector (WHO). The COVID 19 – Coronavirus Disease 2019 is a respiratory tract infection caused by a newly emergent coronavirus which is mutating frequently. Hence, there are no specific vaccines/treatment available till date.

These are very difficult times for everyone –

- The patients
- Healthcare providers
- Security agencies
- Providers of basic amenities

..... Above all the entire population of the nation.

2. Identification – Which cases to operate ?

Here first I would like to lay emphasis that all non-emergency cases should be postponed.

We need to ask ourselves and decide clearly who requires surgery and who can be managed conservatively, and surgery delayed for some time.

All hospitals must suspend the elective and non-urgent cases, allow staffing and resources to be deployed to emergency and cancer surgeries where they are most required.

3. Risks – What are the risks involved in the surgery and who are at risks?

Highest transmission of virus is seen when performing aerosol generating procedures (AGPs)

A high viral load is seen in respiratory secretions. AGPs like:

- Intubation
- Extubation Have highest risk for HCW (Health Care Workers)

Who are maximally at risk?

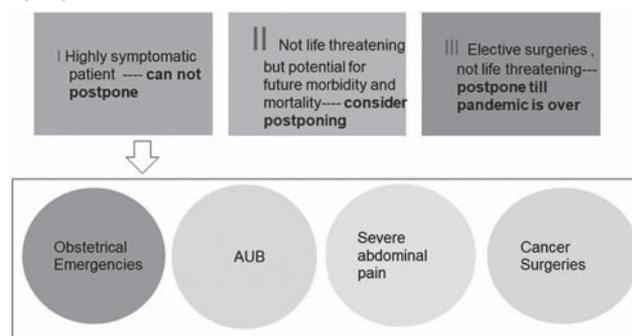
- Anaesthetists
- Emergency department clinicians
- ENT Specialists
- OT technicians
- Cleaning staff

4. Gynae Surgeries – Which surgeries to be performed?

Confirm the indications for urgent surgeries

- Reconsider alternatives to surgery
- Defer surgical interventions wherever possible
- Consider Regional anaesthesia wherever possible to avoid GA and aerosol spread

The following figure classifies the Gynae surgeries. The patients are triaged according to severity of symptoms.



4.1: Highly symptomatic patient

- Obstetrical Emergencies
Already numerous guidelines have been presented by eminent speakers.(here we shall restrict to gynaecological surgeries)
- **AUB**

AUB – medical m/m ----> not responding to routine medical m/m → Endometrial aspirate /EB/D&C under local/sedation for HPE ---à conservative hormonal treatment if possible/ Hysterectomy(vaginal or open) / TCRE under regional anesthesia preferably / Total Laparoscopic Hysterectomy if GA is required.

• Severe Abdominal Pain

1. **Ovarian cyst** – consider medical management

- NO improvement /**torsion – surgery**
- improvement – defer surgery

2. **Ectopic**

- Unruptured ---medical m/m
- **Ruptured --- surgery**

3. **Metastatic deposits** causing pain

- symptomatic treatment
- **block therapy**

• Cancer Surgeries

Cancer surgeries – **where option of Radiotherapy/Chemotherapy to prevent progress doesn't exist**

Early stage cervical cancer – (<2cm, low risk histology) Conization/Trachelectomy to tide over the present lockdown, thereafter the patient can be referred for Radiotherapy

Advanced stage Endometrial Ca : Tissue Bx and proceed for systemic therapy

High risk Early stage Endometrial cancer(Gr2 or 3): Simple Pan hysterectomy +/- sentinel LN

Early stage Ovarian malignancy as per risk score for malignancy and imaging: Staging laparotomy under regional anesthesia

Advanced stage ovarian Ca: tissue Bx, then neoadjuvant CT(can be extended to 6 cycles instead of the usual 3 cycles which are followed by surgery and then 3 cycles)

4.2: Not Life Threatening but potential for future morbidity

- Stage 1, gr1 endometrial Ca : conservative with systemic hormonal therapy and consider postponing surgery for some time

- CA cervix - In grossly visible tumor: neoadjuvant chemotherapy
- In locally advanced disease of CaCx: Brachytherapy
- LSIL : Follow up after 6 to 12 months
- HSIL : Follow up after 3 months
- unruptured diagnosed ectopic pregnancy – conservative management
- symptomatic fibroids uterus – hormonal treatment

4.3: Elective Surgeries – not life threatening

Any elective surgery which can be postponed for a few months without significant detrimental effects.

Postpone till pandemic is over

- Myomectomies
- Non-Emergency hysterectomies
- Surgeries for endometriosis
- Fertility enhancing surgeries
- Non-cancerous ovarian cysts
- Hysteroscopic surgeries
- LEEP & related procedures
- Sterilization operations
- MTPs by D&E

Patients can also be triaged according to risks involved into :

• Low risk

- no AGP required
- Can be performed under regional block / LA

• High risk

- Requiring GA (Intubation / Extubation)
- AGPs like laparoscopy surgeries / open surgeries requiring GA / LEEP / infected cases

5. How? - Pre-requisites and Precautions

The following are the pre-requisites and precautions one needs to follow.

5.1: Screening

For COVID 19 prior to surgery, while Royal College recommends it, ICMR has not included this in its guidelines so far.

Screening protocols :

- Screening before entering hospital
- Isolated and separated room preferably outside the hospital building (avoid sharing of rooms, general wards)
- All health personnel should wear mask, plastic apron and gloves (change gloves in between patients)
- Patients & relatives should continuously wear masks
- In event of a positive history, the patient is sent to hospitals managing COVID patients

5.2: Consent Forms

- Consent forms including a travel history / whether contact is a suspected +ve case / symptoms of fever / respiratory distress / patient being a healthcare provider etc
- Cover the risks associated with COVID 19
- Consent form for surgery
- A consent stating that the patient will not leave LAMA and in case she does, the local police & health authorities should be informed
- A guardian to sign as substitute decision maker

5.3: Proper SOPs

Proper SOPs should be made for individual hospital setups:

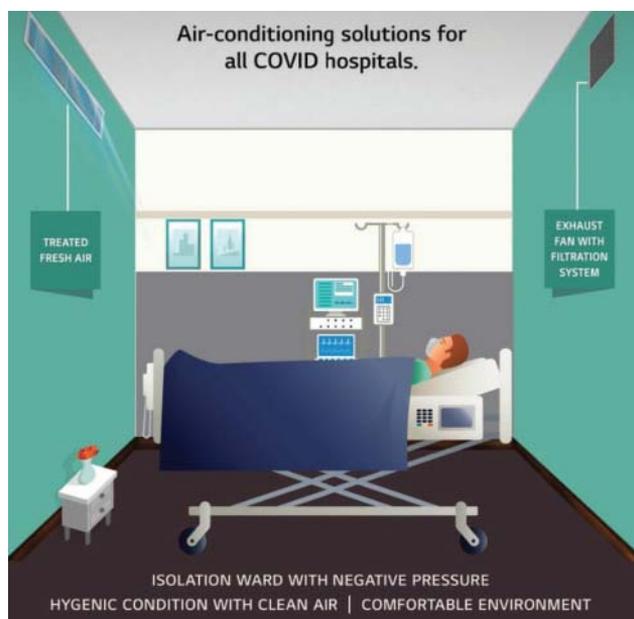
- Separate Donning & Doffing areas
- Levels of PPEs to be used
- Separate wards and theatre allocations for –
 - COVID 19 positive patients
 - surgical emergencies
 - clinically urgent cases
- If patient exhibits symptoms of Viral illness, delay the surgery.
- If surgery cannot be delayed, then proceed as CoViD +ve case
- A surgeon should avoid operating at multiple centers to prevent cross contamination
- All OR professionals should be RT PCR –ve for COVID-19

5.4: In Theatre

- Minimum number of well trained staff with no exchange of staff
- FULL PPE including VISORs (with proper donning technique)
- Smoke evacuation- high frequency of filtered air exchanges in OT
- Only anesthetist & team to be present during induction, surgeon to enter OT after 20 min
- When GA is a must, use a specified box over head of patient to minimize spread of aerosol
- Only senior experienced anesthesiologists to intubate and extubate
- Intubation and Extubation should be performed within a negative pressure room

6. Types of PPE

	PPE I	PPE II	PPE III
Purpose- Avoid	Contact Spread	Droplet Infection	Aerosol Spread
When to use	OPD >3ft away	<3ft, Examination, Open procedures, (Regional anaesthesia with no AGP)	GA, Laparoscopy, Laparotomy with bowel surgery / diathermy use
Mask	Mask	Visor Mask / N95	N95 with additional mask
Gown	If available	Waterproof	Waterproof
PPE kit	If available	Mandatory	Mandatory



Picture showing a high frequency of filtered air exchanges shown in an air conditioned room for COVID hospitals

Picture showing a transparent box placed over the head and chest of patient with holes to insert hands for intubation by anaesthetist.



7. Feasibility of Laparoscopy

Laparoscopic procedures and GA should be avoided in COVID +ve patients.

Precautions to be taken to prevent viral contamination to staff during all surgeries -Open or Minimally Invasive

As per IAGE recommendations :

Laparoscopy should be performed only if -

- Emergency surgery is required
- GA is required
- Full safety measures including PPE kits are available for entire team

Emergency surgeries where laparoscopy may be offered are -

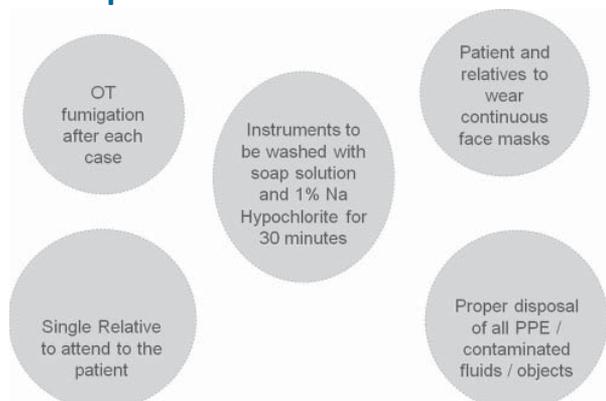
- Ectopic pregnancy
- Acute adnexal torsion
- TCRE / Hysteroscopic polypectomies under RA
- Level I TLH for AUB not responding to medical management
- Onco-surgery if other treatment options are not suitable & GA needs to be given (e.g early Ca Cx in young patient, early endometrial cancer)
- Surgeries to treat post op complications

8. Precautions during Laparoscopy

- **Negative pressure rooms** should be considered if possible
- High Efficiency Particulate Air (**HEPA**) filters provide a terminal cleaning
- **Sterile camera cover for all cases**
- **Incision** points should be of **precise size** to prevent leakage around ports
- Once placed, **ports** should **not be vented**
- **CO2 insufflation pressure** to be kept at **minimum**

- **Minimize Trendelenburg** position
- Removal of caps on laparoscopic instruments could release fluid / air
- **Electro surgery** should be set to the **lowest possible settings**
- Use of monopolar, ultrasonic devices & advanced Bipolar devices should be minimized to prevent particle aerosolization, **use endoloops / endosuturing**
- The **outlet** should be attached to **filters / pipes let out in a closed circuit to 1% Na hypochlorite solution**
- A **closed suction system** is preferred. The suction container can be prefilled with **1% Na hypochlorite solution**
- **Morcellators** are to be **avoided**
- All **pneumoperitoneum** should be safely **evacuated** via a filtration system/suction **before closure, trocar removal, specimen extraction** or conversion to open
- The **patient** should be **flat** & least dependent port should be used for **desufflation** by suction
- All cannulas should be removed after placing trocars and with closed valves except primary port
- We should **raise our threshold to insert a drain, avoid drains**
- Suture closure devices allow leakage of insufflation, hence should be avoided. **Fascia should be closed after desufflation**
- During **Colpotomy**, a **vaginal Tube colpotomiser** can be introduced in vagina, specimen can be retrieved in a **purse string type endobag** after **desufflation** and waiting for 5 minutes to minimize leakage

9. Post Ops



10. Points to remember

With the limited evidence & knowledge that we have about COVID-19, it appears that it's largely transmitted via respiratory droplets & AGPs increase the risk of transmission.

Gynae laparoscopic surgeries, general anaesthesia and electro surgery used in open surgeries are AGPs.

Although the data is less, this virus has not been isolated for female genital tract in COVID-19 +ve women so far

The Virus has been detected in 29% cases in the foeces & 1-5% in blood of the patients, thus any surgery with involvement of GI tract should not be performed laparoscopically like severe endometriosis with rectosigmoid involvement, radical surgeries, surgeries where adhesions or bowel are anticipated.

In infected cases such as Tubo ovarian abscesses, pelvic abscesses etc. an open technique should be used to minimize contamination & spread.

The benefit of laparoscopy management, need to be balanced against the higher morbidity with laparotomy specially in women with high BMI, DM etc.

There is a paucity of data surrounding the safety of open approach too and the potential transmission risks. Filtration of aerosolized particles may be more difficult during open surgery.

11. Suggestions / Summary

All elective surgical procedures should be postponed during the pandemic

Only those considered essential staff should be participating in emergency cases

PPE and CDC recommendations should be used in all surgical procedures

Both the open & Laparoscopic surgeries have the propensity to generate aerosols. However the overall risk is lower with open surgery.

Regional anaesthesia should be preferred over GA wherever possible to decrease AGPs

The significant benefits of adopting a minimal invasive approach, namely reduced morbidity, shorter hospital stay, quicker return to daily activities, lesser use of hospital resources and personnel are not unknown but due to risk involved with GA and laparoscopic surgeries preference should be to perform open surgeries under RA to avoid insufflation / intubation / minimize head low position / decrease use of energy sources / to avoid room contamination with gas and fumes leakage

Laparoscopic surgery should be offered when emergency surgery and GA is required for certain cases as specified earlier under IAGE guidelines.

All surgeries whether open / laparoscopic should be performed by senior surgeons with expertise in their fields using adequate PPE for entire team and in the shortest possible time.

12. References

- IAGE Good Clinical Practice Recommendations for Gynaecological Endoscopy during the COVID-19 Pandemic, Version 1 16th April 2020
- SAGES AND EAES RECOMMENDATIONS REGARDING SURGICAL RESPONSE TO COVID-19 CRISIS March 29, 2020 by Aurora Pryor (<https://www.sages.org/author/aurora-pryor/>)
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- Coronavirus (COVID-19) Standard Operating Protocols Max Healthcare
- Published online 2020 Apr 1. PMID: 32259155 Covid 19 pandemic and gynaecological laparoscopic surgery: knowns and unknowns R Mallick, F Odejinmi, and TJ Clark
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Study of Maternal Near Miss Cases and Events in A Tertiary Care Centre

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Introduction:

World Health Organization (WHO) defines a maternal near miss case as a woman who nearly died but survived a complication that occurred during pregnancy, child birth or within forty-two days of termination of pregnancy (irrespective of site of pregnancy and period of gestation).¹

The Objectives of the study was to observe frequency and spectrum of near miss cases and maternal mortality in a tertiary care hospital (using WHO Criteria of identification).

The present study was a prospective observational study, carried out from July 2017 to August 2018.

Subject and setting:

Woman who had any one of the several markers as mentioned in the WHO inclusion criteria for maternal near miss/mortality during the study period were included. The number of maternal near miss cases and causes were studied along with quality of care provided to a near miss case for saving her life were studied. Severity of illness was calculated with the help of SOFA Score² and APACHE II Score³.

Study Methodology

WHO Near miss tool⁴ was used: brief summary is as follows-

Severe maternal complications

Severe postpartum haemorrhage ---- Genital bleeding after delivery, with at least one of the following: perceived abnormal bleeding (1000 ml or more) or any bleeding with hypotension or blood transfusion.

Severe pre eclampsia - Persistent systolic blood pressure of 160 mmHg or more or a diastolic blood pressure of 110 mmHg; proteinuria of 5 g or more in 24 hours; oliguria of <400 ml in 24 hours; and HELLP syndrome or pulmonary oedema. Excludes eclampsia.

Eclampsia – Generalized fits in a patient without previous history of epilepsy. Includes coma in pre-eclampsia.

Sepsis or severe systemic infection— Presence of fever (body temperature > 38^oc), a confirmed or suspected infection (e.g. chorio-amnionitis, septic abortion, endometritis, pneumonia), and at least one of the following: heart rate >90, respiratory rate >20, leukopenia (white blood cells <4000), leucocytosis (white blood cells >12,000).

Ruptured uterus----Rupture of uterus during labour confirmed by laparotomy

Critical interventions or intensive care unit use

Admission to intensive care unit

Interventional radiology

Laparotomy (includes hysterectomy, excludes caesarean section)

Use of blood products

Life -threatening conditions (near -miss criteria)

Cardiovascular dysfunction-shock, cardiac arrest (absence of pulse/heart beat and loss of consciousness), use of continuous vaso-active drugs, cardio-pulmonary resuscitation, severe hypoperfusion (lactate > 5mmol/l or >45 mg/dl), severe acidosis (pH <7.1)

Respiratory dysfunction -acute cyanosis, gasping, severe tachypnoea (respiratory rate >40 breaths/minute), severe bradypnoea (respiratory rate <6 breaths / minute), intubation and ventilation not related to anaesthesia, severe hypoxemia (O2 saturation <90% for >= 60 minutes or PAO2/FiO2 <200).

Renal dysfunction -oliguria non responsive to fluids or diuretics, dialysis for acute renal failure, severe acute azotemia (creatinine >= 300 mcg mol/ml or >3.5 mg/dl)

Coagulation/haematological dysfunction-failure to form clots, massive transfusion of blood or red cells (>=5 units), severe acute thrombocytopenia (<50,000 platelets/ml)

Hepatic dysfunction-jaundice in the presence of pre-eclampsia, severe acute hyperbilirubinemia (bilirubin >100micromol/l or >6.0mg/dl)

Neurological dysfunction - prolonged unconsciousness (lasting >=12 hours) / coma (including metabolic coma), stroke, uncontrollable fits/status epilepticus, total paralysis.

Uterine dysfunction - uterine haemorrhage or infection leading to hysterectomy

Maternal vital status -Maternal death

Results

Mean age of the near miss cases was 29.01years and maximum number of cases were in the age group between 26-30 years (37.03%). Most of near miss cases were seen in the primipara females (63.07%) and in the third trimester (72.72%). Maximum number of the near miss cases belonged to the middle-class socio-economic status(upper middle class -41.97% and lower middle class -56.80%). Regarding the educational status, 84.07% near miss cases were educated upto graduate level. All the maternal near miss cases were married. Majority of near miss cases were seen in the referred cases (69.14%) and spontaneous conception was seen in 90.13% cases only 9.87% of near miss cases conceived after in vitro fertilization (IVF).

Maximum number of near miss cases (71.60%) occurred within first 12 hours of hospital admission. Mode of delivery in maximum number of near miss cases was caesarean section (56.79%) and only 17.28% delivered vaginally. Five patients (6.17%) underwent laparotomy for management of ectopic pregnancy and one patient (1.23%) underwent laparotomy for ruptured uterus.

Eleven patients (13.58%) were discharged still pregnant or undelivered.

Most common obstetric event leading to near miss case was due to severe post-partum haemorrhage accounting to 45.45%, followed by sepsis (29.55%), severe pre-eclampsia (13.64%), eclampsia (9.09%) and uterine rupture (2.27%).

Blood or blood products were required in 44.53% of the near miss cases, 42.01% of the near miss cases required admission to the intensive care unit, Laparotomy for ruptured ectopic pregnancy was performed in 12.60% cases, uterine artery

embolization was done in one patient.

Maximum number of the near miss cases (26.56%) had respiratory dysfunction, followed by 21.09% cases with coagulation dysfunction and 13.2% cases with cardiovascular dysfunction, uterine dysfunction leading to hysterectomy was seen in 11.72% cases, hepatic dysfunction was seen in 9.38% cases and acute renal dysfunction was seen in 7.81% cases.

Total ten maternal mortalities occurred during the study period, post caesarean section sepsis with septic shock with multi organ dysfunction was seen in 30% of maternal mortalities, fulminant hepatitis with encephalopathy accounted for 20% of maternal mortalities, 20% of deaths were due dengue fever with haemorrhagic shock syndrome, 10% of mortalities were due to post vaginal delivery with febrile illness with cortical venous thrombosis, 10% were due to post LSCS sigmoid sinus thrombosis and post abortion D&C with sepsis with septic shock led to 10% of maternal mortalities.

Maternal near miss indicators in the study were as follows: total number of maternal near miss cases during the study period were 81 and there were 10 maternal mortalities. Severe maternal outcome ratio was 40 per 1000 live births, Maternal near miss incidence rate in the study was 35.60 per 1000 live births, Maternal near miss to mortality ratio was 8.1:1, maternal mortality ratio was 439.56 per 100,000 live births, mortality index was 10.98%.

Following Near Miss Indicators Will Be Calculated

Women with life-threatening conditions (**WLTC**) refers to all women who either qualified as maternal near-miss cases or those who died (i.e. women presenting a severe maternal outcome). It is the sum of maternal near-miss and maternal deaths (**WLTC = MNM + MD**).

Severe maternal outcome ratio (**SMOR**) refers to the number of women with life-threatening conditions (**MNM + MD**) per 1000 live births (**LB**). This indicator gives an estimate of the amount of care and resources that would be needed in an area or facility [**SMOR = (MNM + MD)/LB**].

MNM ratio (MNMR) refers to the number of maternal near-miss cases per 1000 live births

DEPARTMENT OF CRITICAL CARE & EMERGENCY MEDICINE
Sir Ganga Ram Hospital, New Delhi

APACHE II SCORE
 Name: _____ Age: _____ Sex: _____ Bed No.: _____
 MRD No.: _____ Unit: _____

PHYSIOLOGIC VARIABLE	HIGH ABNORMAL RANGE				LOW ABNORMAL RANGE				AGE POINTS	Points	DIA (SOFA)	DIA (SOJ)	TRF FROM	DIAGNOSIS	
	4	3	2	1	0	1	2	3							4
TEMP (RECTAL) °C	≥ 41	39-40.9		38.5-38.9	36-38.4	34-35.9	32-33.9	30-31.9	≥ 39.0	Age in years					
MEAN ART PRESS mm Hg	≥ 160	130-159	110-129		70-109		50-69		≥ 40	45-54	5				
HEART RATE (ventricular response)	≥ 180	140-179	110-139		70-109		55-69	40-54	≥ 39	55-64	3				
RESP RATE	≥ 50	35-49		25-34	12-24	10-11	6-9		≥ 5	65-74	5				
OXYGENATION											CHRONIC HEALTH POINTS				
a) FIO ₂ ≥ 0.5 RECORD	≥ 500	350-499	200-349		<200					FILL ONLY IF PATIENT HAS PAST H/O SEVERE ORGAN INSUFFICIENCY / IMMUNOCOMPROMISED					
A-aDO ₂															
b) FIO ₂ < 0.5 RECORD						PO ₂ >70	61-70	55-60	<55						
PaO ₂															
ARTERIAL pH	≥ 7.7	7.6-7.69		7.5-7.59	7.33-7.49		7.25-7.32	7.15-7.24	<7.15	NON OPERATIVE EMERGENCY POST OP ELECTIVE POST OP		3 POINTS	3 POINTS	2 POINTS	
SERUM SODIUM (mmol/L)	≥ 180	160-179	155-159	150-154	130-149		120-129	111-119	≤ 110						
SERUM K ⁺ (mmol/L)	≥ 7	6-6.9		5.5-5.9	3.5-5.4	3-3.4	2.5-2.9		<2.5						
S-CREATININE (mg/dl) (points x 2 if ARF)	≥ 3.5	2-3.4	1.5-1.9		0.6-1.4		<0.5			APS POINTS					
HAEMATOCRIT %	≥ 60		50-55.9	46-49.9	30-45.9		20-29.9		<20	CHRONIC HEALTH POINTS					
TLC (in 000)	≥ 40		20-39.9	15-19.9	3-14.9		1-2.9		<1	TOTAL SCORE					
GCS SCORE (15-actual GCS)											OUTCOME:				
TOTAL APS (12 VAR)											Shifted to Room No. _____				
SERUM HCO ₃ (mmol/L) (if no ABG)	≥ 52	41-51.9		32-40.9	22-31.9		18-21.9	15-17.9	<15	(Put / Mark) - Shifted to 4th HDU / Shifted to 3rd HDU					
											(Put / Mark) - Death / LAMA / Discharge / DOR				
											DATE → _____				

DOCTOR ON DUTY1: _____ SISTER ON DUTY1: _____ DOCTOR ON DUTY2: _____ SISTER ON DUTY2: _____

Sequential Organ Failure (SOFA) Score

SOFA score evaluate status of the following organ systems separately:
 1. Respiration 2. Coagulation 3. Liver 4. Cardiovascular
 5. Central Nervous System 6. Renal

1. Respiration

PaO ₂ /Fio ₂ mmHg	SOFA score
> 400	0
≤ 400	1
≤ 300	2
≤ 200	3
≤ 100	4

4. Cardiovascular

Hypotension	SOFA score
No Hypotension	0
MAP < 70 mm Hg	1
Dopa ≤ 5 or Dabu	2
Dopa > 5, Epi ≤ 0.1 or nor Epi ≤ 0.1	3
Dopa > 15, Epi > 0.1 or nor Epi > 0.1	4

2. Coagulation

Platelets x 10 ³ /mm ³	SOFA score
>150	0
≤ 150	1
≤ 100	2
≤ 50	3
≤ 20	4

5. Central Nervous System

GCS	SOFA score
15	0
13 - 14	1
10 - 12	2
6 - 9	3
< 6	4

3. Liver

Bilirubin, mg/dl	SOFA score
<1.2	0
1.2 - 1.9	1
2.0 - 5.9	2
6.0 - 11.9	3
> 12.0	4

6. Renal

Creatinine, mg/dl (or urine output)	SOFA score
> 1.2	0
1.2 - 1.9	1
2.0 - 3.4	2
3.5 - 4.9 (or < 500 ml/d)	3
> 5.0 (or < 200 ml/d)	4

TOTAL SCORE : _____

Conclusion

The quality of care received by critically ill obstetric patients in this centre is optimal for near miss events like haemorrhage and anaemia as the mortality index were lowest for both events but needs to improved for infections and hypertensive disorders of pregnancy. In a tertiary care hospital, it is possible to save most of the patients presenting with life threatening conditions by adopting evidence-based protocol, training of personnel, improving the resources and multidisciplinary approach for managing severe morbidities. Overall reduction in maternal mortality can be achieved by improving the antenatal care and timely referral of cases to tertiary care hospital thus aiming to meet and surpass the sustainable development goal.

Recommendations

Proper documentation of near miss cases and events is needed in an attempt of future reduction in the maternal morbidity and mortality. More number of prospective studies on maternal near miss cases is required for the assessment of

actual burden of health problems associated with pregnancy and childbirth and to suggest corrective measures which can be taken for the improvement of obstetric care and thus help in the achievement of sustainable development goal which aims at reduction of maternal mortality ratio less than 70 per 100,000 live-births by the year 2030.

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Journal Scan

The Role of Hydroxychloroquine Sulphate and Chloroquine Phosphate in the COVID 19 Pandemic

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The journal scan for this month's AOGD bulletin focuses on the use of hydroxychloroquine phosphate and chloroquine sulphate in preventing or treating the SARS CoV 2 disease.

We start by looking at the published trials on the use of these two drugs in treating COVID-19. The table below summarises the results of a pubmed search employing the words Chloroquine [OR] Hydroxychloroquine [AND] COVID 19 [OR] Coronavirus.

Author, Study	N	Whether Randomized	Population	Intervention	Comparison	Primary Outcome	Results
<i>Chen J, Liu D, Liu L, et al. A pilot study of hydroxychloroquine in treatment of patients with common coronavirus disease-19 (COVID-19). J Zhejiang Univ (Med Sci). 2020;49.</i>	30	Yes	Treatment naïve COVID-19 patients	Standard Treatment+HCQ 400 mg OD for 5 days after randomization	Standard Treatment	Negative conversion rate of COVID-19 nucleic acid in respiratory pharyngeal swab on day 7 after randomization	86.7% in interventional arm vs. 93.3% in control arm
<i>Gautret P, Lagier J-C, Parola P, et al. Hydroxychloroquine and azithromycin as a treatment of COVID-19: results of an open-label non-randomized clinical trial. Int J Antimicrobial Agent. 2020; 105949</i>	46	No	French confirmed COVID-19 patients	600mg HCQS a day. Azithromycin added depending on clinical presentation	Untreated patients from other centres and patients refusing protocol formed comparison arm	Reduction of viral carriage at D-6 post inclusion	Significant reduction in viral carriage seen. Azithromycin added to HCQS more efficient for viral elimination
<i>*Zhaowei Chen1, et al. Efficacy of hydroxychloroquine in patients with COVID-19: results of a randomized clinical trial. medRxiv. 2020</i>	62	Yes	COVID 19 diagnosed and admitted patients in Wuhan	400mg/day HCQ for 5 days	Standard Care	Time to clinical recovery	80.5 % improvement in pneumonia in intervention arm versus 54.8% in control arm. 2 patients with mild adverse reaction in intervention arm
<i>Tang W, Cao Z, Han M, et al. Hydroxychloroquine in patients with COVID-19: an open-label, randomized, controlled trial. medRxiv. 2020</i>	150	Yes Open label multicentric, RCT	patients hospitalized in 16 centres of China through 11-29 Feb 2020 with COVID-19	1, 200 mg daily for three days followed by a maintenance dose of 800 mg daily for the remaining days (total treatment duration: 2 or 3 weeks for mild/moderate or severe patients, respectively)	Standard care (SOC)	A) 28-day negative conversion rate of SARS-CoV-2 B) reduction of CRP C) Adverse events	A) 85.4% (HCQ+SOC) vs. 81.3% (SOC) p=0.34 B) significant reduction of CRP in the HCQ P=0.045) C) Higher adverse events in HCQS 30% vs. 8.8% in standard care arm.

<p><i>*Mahevas M, Tran V, Roumier M, et al. No evidence of clinical efficacy of hydroxychloroquine in patients hospitalized for COVID-19 infection with oxygen requirement: results of a study using routinely collected data to emulate a target trial. medRxiv. 2020:1-20</i></p>	<p>181</p>	<p>No</p>	<p>Adults with documented SARS CoV2 pneumonia requiring >=2L/min oxygen admitted in 4 French Hospitals</p>	<p>600mg HCQS/day</p>	<p>97 patients with similar characteristics who did not receive HCQS</p>	<p>Transfer to ICU within 7 days of initiation and/or death</p>	<p>20.2% in HCQS group and 22.1% in no-HCQ 16 vs 21 events RR 0.91 95%CI: 0.47-1.80. 8 patients receiving HCQ experienced cardiotoxicity requiring discontinuation.</p>
<p><i>Borba MGS, Val FFA, Sampaio VS, et al. Effect of High vs Low Doses of Chloroquine Diphosphate as Adjunctive Therapy for Patients Hospitalized With Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) Infection: A Randomized Clinical Trial. JAMA Netw Open. 2020;3(4): e208857</i></p>	<p>80</p>	<p>Yes parallel double blinded RCT</p>	<p>Hospitalized patients with SARS CoV 2 in Manaus, Brazil</p>	<p>600mg CQ twice daily for 10 days All patients in addition received ceftriaxone and azithromycin</p>	<p>450mg daily for 5 days</p>	<p>Adverse events in the two arm</p>	<p>Prolongation of QT interval 25% and high lethality 17% in the high dose arm</p>

* In preprint stage

Comments: Six interventional trials were found on pubmed using the search words, Chloroquine or Hydroxychloroquine and Coronavirus or Covid 19. Four of these are randomised and two, non randomized interventional trials. The population in each of these trials was patients hospitalized with mild to moderate symptoms of Covid 19. Intervention in these studies varies from administering a dose of 500-1200 mg of HCQS a day for variable periods ranging between 5 days to 3 weeks. The point of starting has been a period of 10 to 16 days after symptom onset. Outcomes are mostly negativity of RT PCR 7 to 28 days after initiation of treatment or recovery from fever, cough or pneumonia and in one study, transference to ICU or death. Two small trials (n=46 and n=62), one non-randomized and the other randomized, reported improvement in clinical symptoms and RT PCR negativity rate. Three randomized controlled trials with relatively larger sizes (n=150, n=80 and n=30) and one large non-randomized trial (n=181) did not report improvement over standard care. In fact one trial (n= 80) reported an increase in cardiac mortality by two times in the arm receiving 1200 mg HCQS per day over 450 mg of HCQS per day.

In summary, the available literature is limited by small numbers, variable interventions in terms of therapeutic dosage, onset times or treatment durations and variable outcomes. But it can be said, that the perceived benefits of chloroquine/HCQ in preventing or treating patients of SARS CoV 2 is not yet established. The adverse effects of chloroquine/HCQ need to be kept in mind especially when given in high doses exceeding 600mg per day or when given for prolonged periods exceeding two weeks.

We next look at the Centre for Disease Control’s statement on Chloroquine and Hydroxychloroquine issued as recently as the first week of May. (Link given here: <https://www.covid19treatmentguidelines.nih.gov/therapeutic-options-under-investigation/>)

- A. There are insufficient clinical data to recommend either for or against using chloroquine or hydroxychloroquine for the treatment of COVID-19 (AIII). If chloroquine or hydroxychloroquine is used, clinicians should monitor the patient for adverse effects, especially prolonged QTc interval (AIII).
- B. Except in the context of a clinical trial, the COVID-19 Treatment Guidelines Panel (the Panel) recommends against the use of the following drugs for the treatment of COVID-19:
 - 1. The combination of hydroxychloroquine plus azithromycin (AIII) because of the potential for toxicities.
 - 2. Lopinavir/ritonavir (AI) or other HIV protease inhibitors (AIII) because of unfavorable pharmacodynamics and negative clinical trial data.

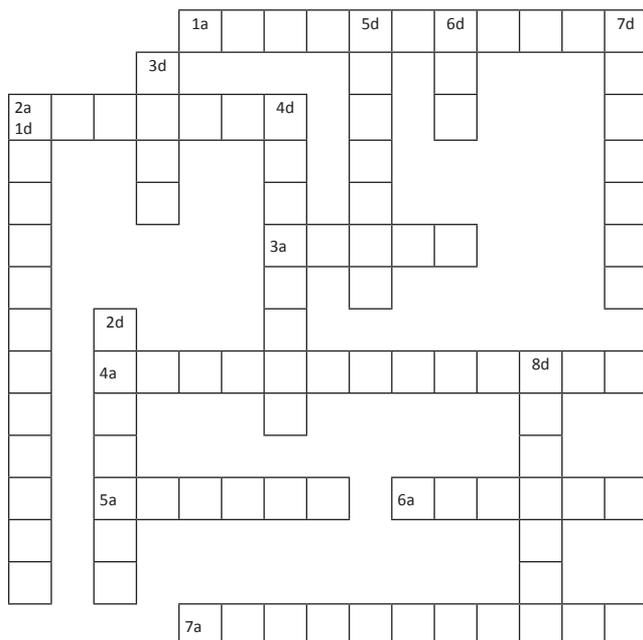
Cross Word Puzzle

Assembled and Designed by **Ruma Satwik**

Consultant, Centre of IVF and Human Reproduction, Sir Gangaram Hospital, New Delhi

CROSSWORD

Test your knowledge of Reproductive Anatomy and Physiology



ACROSS:

1. The endometrium, exclusive of the area occupied by the implanted ovum and chorion (7,4)
2. Aminoacid on the sixth position of the decapeptide GnRH (7)
3. A vascular structure located at the tip of penis (5)
4. A type of cell appearing in the endometrium in the secretory phase that has an immunoprotective role in implantation (7,1,1,4)
5. Cells producing testosterone in the male (6)
6. The segment of gene not represented in mature RNA, and therefore non coding for protein, but capable of regulatory function (6)
7. Ovarian cysts developing in pregnant women in conditions producing high hCG (5,6)

DOWN:

1. The process by which the bilaminar embryonic disc reorganises to form a three layered disc.(12)
2. Cells surrounding the oocyte (7)
3. A common facial eruption during puberty (4)
4. Newly available oral GnRH antagonist (8)
5. A dutch physiologist and anatomist whose eponymous discovery is the ovarian follicle. (2,5)
6. Deletions on long arm of X chromosome in men causes this syndrome (3)
7. GnRH released from the axonal ends of neurons concentrated in the ——— nucleus of the hypothalamus (7)
8. Metabolite of estradiol (7)

PICTORIAL QUIZ

Picture provided by **Mamta Dagar**

Senior Consultant, Obst. & Gynae, Sir Gangaram Hospital, New Delhi



Identify this lesion

Whatsapp your answers to **9211656757**.
Names of first three correct entries will be mentioned in the next issue

Association of Obstetricians & Gynaecologists of Delhi

MEMBERSHIP FORM

Name:.....

Surname:

Qualification:.....

Postal Address:

City:..... State: Pin code:.....

Place of Working:.....

Residence Ph. No. Clinical / Hospital Ph. No.

Mobile No:..... Email:.....

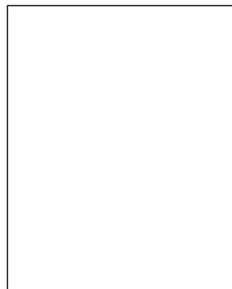
Gender: Male:..... Female:.....

Date of Birth: Date..... Month Year.....

Member of Any Society:.....

Proposed by

Cheque/DD / No:



Enclosed: Cheque/Demand Draft should be drawn in favour of:

- For Life Membership : Rs. 11,000 + Rs. 1,980 (18% GST applicable) = Rs. 12,980
- For New Annual Membership* : Rs. 2,000 + Rs. 360 (18% GST applicable) = Rs. 2,360
- For Old Renewal Membership+ : Rs. 1,200 + Rs. 216 (18% GST applicable) = Rs. 1,416

Encl.: Attach Two Photocopies of All Degrees, DMC Certificate and Two Photographs

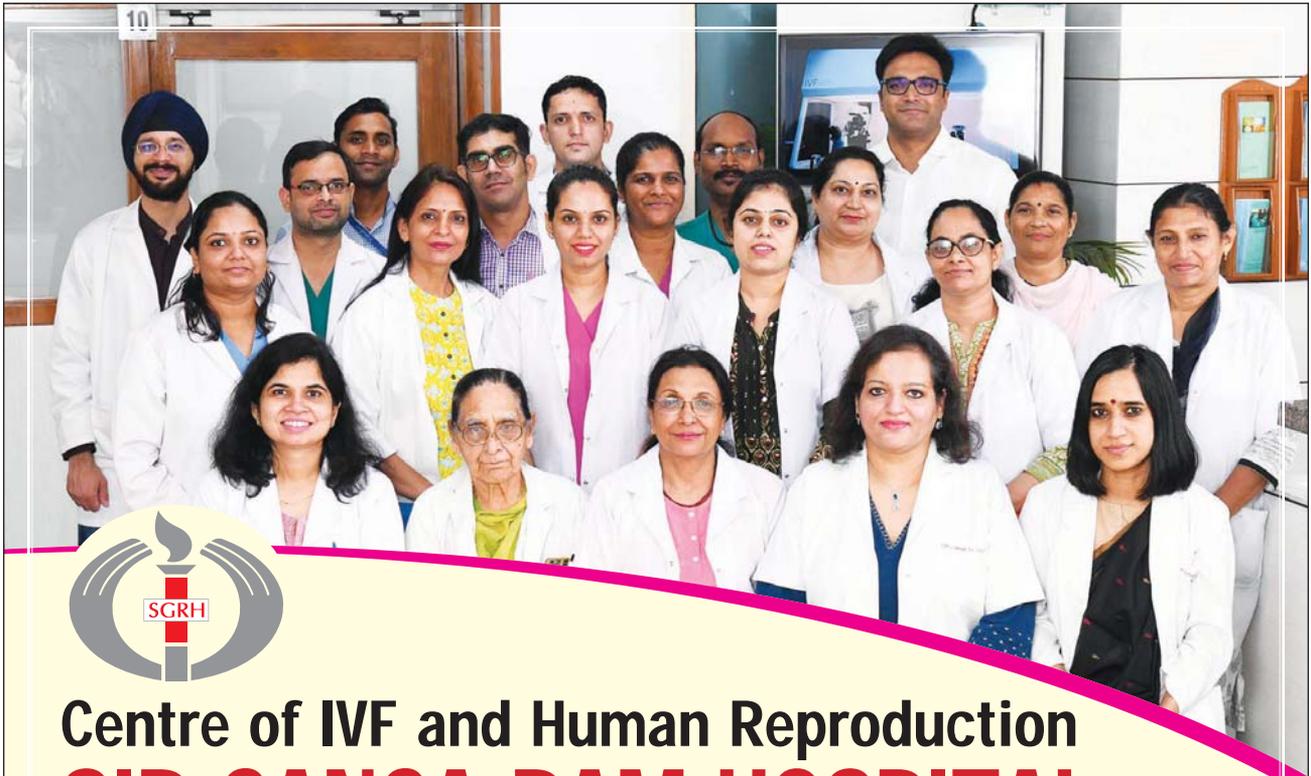
***-Annual Membership is for the calendar year January to December.**

+ - In case of renewal, mention old membership number.

Note: 18% GST will be applicable as FOGSI requires it.

Send Complete Membership Form Along With Cheque / DD and Photocopy of required documents.

AOGD Secretariat
Institute of Obstetrics & Gynaecology, Sir Ganga Ram Hospital
 Sarhadi Gandhi Marg, Old Rajinder, Nagar, New Delhi-110060
 www.aogd.org. Email: secretaryaogdsgrh2020@gmail.com



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Dr Abha Majumdar

Dr Shweta Mittal

Dr Gaurav Majumdar

Dr M Kochhar

Dr Neeti Tiwari

Dr Ruma Satwik

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