AOGD BULLETIN

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Hues of Freedom

Dedicated Issue:

Early pregnancy - a beginning of new life

P for Mother and Child

Promote Health
Protect Rights
Provide Quality Services

AOGD SECRETARIAT

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Spectrum of Freedom-
Freedom from incapacity, ignorance & incarceration

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Message from the President

Dear AOGD friends,

First of all I would like to wish all my colleagues a very Happy Independence Day! It is my earnest wish that our Association contributes in the growth and development of our great nation by 'Promoting Health, Protecting Rights and Providing Quality Services for the mother and child'. The enthusiasm and fervour of our members is such that no goal is unachievable for us!

The present issue focuses on early pregnancy, a beginning- of being mother earth to a new life. I quote here from the sacred Guru Granth Sahib- "jioudhur su(n)jogee dhhuruthee maathaa" ||(pg 1021), meaning that- the womb of the great mother earth gives birth to all. Once a woman decides it is time to bring a new life, it is her obstetrician who has to ensure a happy beginning. To think that we as obstetricians nurture and monitor a new life brings forth into our minds the enormity of our responsibility. The independence of women to decide about their obstetric carrier is one of the reproductive rights she rightly deserves and it is for us to ensure that it is fulfilled. However the altered sex ratio, reveals that not all is well on this front, female feticide is still going on inspite of all the efforts of the GOI, signifying a bigger social issue. But every drop in the ocean counts and the efforts of all of us will turn the tide one day.

"Success is the sum of small efforts repeated day in and day out" -Robert Collier

Dr Pratima Mittal
President, AOGD
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The Past, Present and Future Presidents of AOGD- striving towards Excellence in unison!
They are seen here with Dr Sikdar, Dr Gokul Das and Dr Basab
at National Consultative Meeting for Expanding Basket of FP Services

From the Secretary's Desk

Dear AOGD friends

These bulletins are our platform for conversation with you and we cherish every bit of it. We are delighted to have this opportunity and wish to make it memorable with your inputs.This month we got Delhites into action with our celebration of world population day all over Delhi, replete with enthusiasm. The undying spirit of AOGDians is worth a praise, despite heavy showers, all the 10 CMEs were well attended and all activities diligently carried out.

We are actively continuing with our outreach activities of comprehensive health check-ups for women and next month's camp is planned at Janakpuri by Dr NP Kaur on 9th August. Good news for you all is that 2nd Ethicon certification course will be held in August. Any one who is interested to attend should contact AOGD office. An USG training consisting of 3 modules has also been started at VMMC & Safdarjung Hospital. Our next clinical meeting is at AIIMS on 21st August. I request all the members to attend this, as apart from the scientific bonanza we are also having a GBM in this meeting.

Through this issue, we wish to update you all with latest evidence in management of the problems of early pregnancy. In this month, when we celebrate our freedom day, let us pledge to try to make the women free of preventable disease. As always hoping for your active participation in the AOGD activities as well as the annual conference on 31stOctober and 1st November!

Dr Achla Batra
Hon. Secretary, AOGD
achla_batra@yahoo.com

AOGD Monthly Meeting Schedule 2015-16

Month / Year	**Institute**
Friday, 21st August, 2015	AIIMS
Thursday, 24th September, 2015	**RML Hospital**
Friday, 23rd October, 2015	Sir Ganga Ram Hospital
Friday, 27th November, 2015	MAMC & LNJP Hospital
Friday, 18th December, 2015	Hindu Rao Hospital
Friday, 29th January, 2016	LHMC & SSK Hospital
Friday, 26th February, 2016	UCMS & GTB Hospital
Friday, 25th March, 2016	ESI Hospital, Basaidarapur
Friday, 29th April, 2016	Apollo Hospital

From the Editor's Pen

Dear Friends,

Welcome aboard the fourth issue of our AOGD bulletin. Let us celebrate our Independence Day with the *colors of the Tricolor which symbolizes our freedom*. Let us aspire to gain the strength (orange) to peacefully (white) accomplish all the designated tasks, so as to contribute in the growth of our nation (green).

In this mystical and blissful monsoon when a visit from the stork is announced, a feeling of unsurpassed joy pervades the family. The responsibility of preserving this happiness falls on our shoulders. This present issue focuses on the early pregnancy problems and means to overcome them. The topics included, cover preconceptional counselling and screening for thalassemia; role of progestogens in early pregnancy; evidence based management of ectopic pregnancy and recuurent pregnancy loss; the role of cervical cerclage in cervical insufficiency; guidance on use of USG as per the PC-PNDT Act; and in case of unwanted pregnancy, how to provide comprehensive abortion care- the reproductive right of every woman.

Dr Kamal Buckshee was very kind enough to share the highlights of her life with all of us for our "Luminary" feature. Her memoirs are awe inspiring and are sure to ignite a spark of inspiration in our readers. As always, we our thankful to our dynamic President, Dr Pratima Mittal, for her encouragement and constructive suggestions which enable us to bring the bulletin to its present form. A word of appreciation, for our youngest contributor- Ms Deepshikha Dohare, a student of class 9, who has been beautifully designing the collage for our "Luminary" column.

We are happy that we have received many entries for our Quiz this time, which indicates the interest of our readers. Lucky dip for choosing the winner amongst the correct entrants will be done at the monthly clinical meeting. Hoping for the continued active participation from all of you!

"Dream is not that you see in your sleep, dream is something that does not let you sleep"
-Dr APJ Abdul Kalam

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Pre-Conceptional Care and Counselling

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Preconception care refers to the process of identifying social, behavioral, environmental, and biomedical risks to a woman's fertility and pregnancy outcome and then reducing these risks through education, counseling, and appropriate intervention before conception[1]. Preconception intervention is more important than antenatal intervention for prevention of congenital anomalies since as many as 30 percent of pregnant women begin traditional prenatal care in the second trimester (>13 weeks of gestation), which is after the primary period of organogenesis. The Preconception Care Work Group of the Centers for Disease Control USA recommends that preconception care should be an essential part of primary and preventive care[2-3].

The **three integral components** of pre-pregnancy counseling are:

- Identification of risk factors related to pregnancy (screening).
- Patient education regarding pregnancy risks, management options and reproductive alternatives (information and counseling).
- Initiation of interventions, when possible, to provide optimum pregnancy outcome (interventions).

When and by whom should preconceptional counseling be done?

Local doctor (general practitioner or family physician), obstetricians and gynecologists, and health providers at maternity hospitals/clinic, preconception health clinics, family planning and community health centers.

Health care providers can dispense preconceptional care and counseling during any encounter involving contraception, infertility, pregnancy testing, evaluation for sexually transmitted disease or vaginal infection, or periodic health examination, especially if the woman has pre-existing medical problems

Check list for comprehensive preconceptional health package[4]

Screening

- Screening of the couple through a detailed past and present medical and family history followed by examination.
- Screening to detect haemoglobinopathies, e.g. sickle cell anemia, thalassemia if suspected by family history or examination.
- Screening to identify ABO and Rh(D) blood type to detect possibility of blood incompatibility between would-be couple.
- Screening to detect infectious diseases like HIV, hepatitis B, C and syphilis as suggested by history and examination.
- Screening to detect sexually transmitted diseases (other than syphilis, HIV and HBV) such as gonorrhea and chlamydia as indicated by history.
- Psychosocial and domestic issues should be identified and women with mental health issues should be referred to a psychiatrist.
- Screening to identify rubella immunity of females.
- Haemoglobin levels to identify anaemia.
- Screening for diabetes, hypertension etc. if directed by family history or examination.
- Screening for obesity/underweight

Information and counseling

- Timing of pregnancy- The optimum biological age for pregnancy is between 20-35 years of age. Women should be counseled that advanced maternal age is associated with an increased risk of conditions such as infertility, fetal aneuploidy, miscarriage, stillbirth, gestational diabetes and pre-eclampsia. The risk of fetal chromosomal anomalies, in particular Down's syndrome, increases sharply with increasing maternal age
- Imparting knowledge about reproductive biology and physiology of pregnancy.
- Information about different contraceptive options available for the couple.
- Counseling regarding safe sex practices and behavior.
- Counseling regarding ill effects of substance abuse, alcohol.
- Counseling about optimizing pre pregnancy weight.
- Counseling about healthy life style, nutritive diet and regular exercise.
- Information about effect of chronic diseases, genetic disorders and teratogenic drugs on future child bearing if relevant to the patient.

Interventions

- Confirmatory tests if any of the screening test is positive
- Vaccination of eligible females for rubella, HPV. Advice is given, prior to vaccination, to avoid pregnancy for one month.
- Vaccination of eligible partners for hepatitis B. Individuals, whose partner is HBsAg positive, are given a booster dose of hepatitis B vaccine if they have been vaccinated before, and a full vaccination series if they have not been vaccinated before.
- Couples with a family history of haemoglobinopathy or any other genetic disease are referred to genetic specialist in the region for further evaluation.
- Referral of persons with chronic disorders to respective specialists so as to ensure good control of disease prior to marriage and pregnancy.
- Folic acid supplementation before pregnancy.
- Iron supplementation in iron deficiency anaemia.
- Treatment of STIs detected during screening.
- Cessation of smoking, alcohol and drugs before pregnancy.
- Optimizing weight in obese.
- Replacement of teratogenic drugs like ACE inhibitors, ARBs, lithium, valproic acid, streptomycin, tetracycline, methotrexate etc. by safer alternatives few months before pregnancy

Preconceptional counselling for various medical conditions

Various studies have shown improved outcome with preconceptional intervention in the following medical disorders

Diabetes- Preconceptional advice on diet, exercise and weight loss is crucial for good outcome. Women should be explained that with good glycaemic control the risks of miscarriage, congenital malformations, stillbirth and neonatal death is reduced.HbA1c should be kept below 6.1%. Women with HbA1c of above 10% should avoid pregnancy. Self-monitoring of blood glucose and management of hypoglycemic symptoms should be should be explained.

Hypertension- The goal should be to control blood pressure prior to conception. ACE inhibitors should be stopped before pregnancy (fetal growth restriction, oligohydramnios, renal failure in fetus) and replaced by safer alternatives. Methyldopa or labetalol are the drugs of choice in pregnancy

Asthma- Patients should be advised to use their peak flow meters regularly. Women with repeated asthmatic attacks or severe disease should be referred to a specialist in asthma therapy and not managed by the local doctor. If necessary, the use of steroids (inhaled and systemic) in pregnancy is generally safe.

Thyroid disorders- Routine screening of thyroid function and antibodies in women planning a pregnancy is advisable. Severe and untreated thyrotoxicosis should prompt referral to an endocrinologist during the preconceptional period, as this condition can lead to anovulation, miscarriage, growth restriction and preterm delivery. In newly diagnosed hypothyroidism, specialist advice should be sought about the levothyroxine starting dose

Cardiac disease- Women with a history of cardiac problems should be referred to a cardiologist for baseline cardiac assessments and discussion of potential pregnancy risks. Women advised against pregnancy should be given appropriate contraception.

Epilepsy- Women should be referred to a neurologist for a thorough discussion of the risk of anticonvulsant medications, adjustment of drug regimen and close monitoring during pregnancy.

Polytherapy should be avoided to minimize the teratogenic effects of anticonvulsants. Preconceptional folic acid (5 mg/day) is advised for women on anticonvulsants

Chronic renal disease- Women should be informed that the outcome of pregnancy and any adverse effects on underlying renal disease are influenced by the presence and degree of renal impairment, hypertension (10% risk of fetal loss if pre-existing) and proteinuria. Renal disease during pregnancy is associated with risk of prematurity, growth restriction and deterioration in maternal renal function.

Women with renal transplants should be asked to avoid pregnancy for a minimum of 2 years until renal function is optimized on a reduced amount of immunosuppressants.

To conclude, preconeptional counseling and screening is a very important intervention, which prepares a woman embarking into motherhood, physically as well as emotionally and hence ensures a good maternal and fetal outcome.

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Antenatal Screening for Prevention and Control of Thalassemia

Suman Lata Mendiratta[1], Meenakshi Mittal[2]
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Magnitude of the problem

Thalassemia is one of the most common inherited blood disorders. According to WHO 4.5% of the world's population is affected by thalassemia and allied disorders. Beta thalassemias are a public health problem all over the world, frequency being highest in Greece, Italy and other Mediterranean areas, Middle East countries, parts of India, Pakistan and South East Asia. In India 3-4% of population are carriers of beta thalassemia and 8000 to 10000 children are born every year with thalassemia major.[1,2] In studies conducted by ICMR, the mean prevalence of beta thalassemia was found to be between 2.9% to 4.6% [3], In some areas the incidence of carrier state is higher due to consanguineous marriages. In India communities with high prevalence include Sindhis, Punjabis of North India and Navbudha, Marathas and Muslims in West Maharashtra.

Why is it vital to prevent birth of a thalassemia major baby?

Thalassemia results due to inability of the RBCs to synthesize an adequate amount of alpha or beta chains of hemoglobin. The life span of the RBCs is reduced in thalassemia resulting in anemia of varying severity. In our country beta thalassemia is more common and term thalassemia is used synonymously for beta thalassemia. A thalassemia major child requires lifelong blood transfusions and chelation therapy. Cost of treatment of a child for transfusion and chelation is approx Rs.1- 2 lakhs/ per year. This places considerable strain on the child its family and also on the society and nation at large. Only curative treatment is bone marrow transplant from a matched donor which is available at limited places and the cost is aprox. Rs.10 lakhs. However availability of HLA matched donor is a limiting factor. Stem cell transplant has come up as a new hope but is very expensive; it has an advantage of lesser graft versus host reaction as compared to bone marrow transplant.

Importance of antenatal screening and prenatal diagnosis

Birth rates of homozygous beta thalassemia have been reduced considerably in Cyprus, Sardinia, Italy and Greece due to their extensive screening programs at various levels along with prenatal diagnosis. Control of thalassemia in India is a major problem due to ignorance about the disease, social, cultural & religious taboos and family influences. There is an urgent requirement for starting a thalassemia screening and control program at national level in our country.

The most pragmatic approach for control of thalassemia is prevention of birth of an affected child- for which the recommended screening strategies are:

- Public awareness/education: Education and awareness needs to be spread amongst general population and pregnant women through print and mass media.
- Premarital and preconceptional counseling (refer to article on preconceptional counseling for details) can also play an important role in prevention of thalassemia major as seen in countries like Iran.[4] Many studies have reported success of antenatal screening followed by prenatal diagnosis.[5,6]
- Screening of various population groups like adolescents ie high school college students, young adults in premarital age group, antenatal mothers and extended families of thalassemia major cases.The goal of thalassemia screening is the identification of carrier status in couples prior to conception or in early pregnancy to prevent birth of an affected child. The most effective and feasible way of carrier detection is:
  - screening of antenatal women when they come for their regular check up in antenatal clinic
  - in case an antenatal woman is found to be thalassemia carrier, testing of her spouse to find out "at risk couple".
  - Counseling followed by prenatal diagnosis; option of pregnancy termination if a thalassemia major fetus is detected on prenatal diagnosis.

Screening tests

1. *Red cell indices*: With the use of electronic cell counter machines cell counts are determined. Individuals with MCV < 80 fl and MCH < 27 pg should be examined

further to confirm or exclude diagnosis of beta thalassemia.

2. *NESTROFT test (Naked eye single tube red cell osmotic fragility test)*: It is a simple test based upon the osmotic fragility of red cells. It is based upon the principle that red cells with high surface area/ volume ratio as in thalassemia carriers resist lysis in hypotonic saline. It is done using a drop (20 ul) of blood and 0.36 % buffered saline in a single tube. The sensitivity of this test is 98-100% and specificity is 82-84%. The cost of the test is less than Rs 5.00; it can be adopted as a method of choice for preliminary screening where costly equipment and lab facilities are not available.
3. *HPLC (High performance liquid chromatography):* Is used for estimation of HbA2 levels and detection of abnormal Hb variants. HbA 2 levels of more than 3.5 are used for diagnosis of thalassemia minor. It also measures Hb F and adult Hb. Various other Hb variants like Hb E, Hb D can also be diagnosed with high accuracy by HPLC.

Genetic counseling and prenatal diagnosis

It is given to individuals and couples when both partners are carriers explaining about the risk of thalassemia major birth, facilities for prenatal diagnosis and the option of medical termination of affected fetuses. The aim is prevention of birth of a thalassemic child in the community.

Various techniques for prenatal diagnosis are

1. *Chorionic villous sampling*: done at 10-12 weeks of gestation transcervically or transabdominally under ultrasound guidance. Fetal DNA obtained is tested for various genetic mutations found in thalassemia.
2. *Cordocentesis*: done at 18-20 wks, a fetal blood sample is drawn from cord at its placental end under ultrasound guidance. HPLC is done on the blood sample to diagnose thalassemia major.
3. *Amniocentesis*: Amniotic fluid is collected under ultrasound guidance in second trimester of pregnancy and the shed fetal epithelial cells are analysed for presence of thalassemia mutations.
4. *PGD (Preimplantation Genetic Diagnosis):* In an IVF programme, a biopsy of the embryo is taken before implantation and the cell is analysed for presence of mutations.
5. *Cell free fetal DNA in maternal blood*: This technique has opened up new possibilities for non invasive prenatal diagnosis of affected fetus when both parents are carriers, but is still under trial.

Couples found to be carrying thalassemia major fetus need to be counseled and prompt facilities have to be provided for safe termination of pregnancy. It is important to establish centers for awareness, screening and counseling in hospitals and other institutions and their linkages with higher centres can go a long way in timely detection and thus prevention of birth of affected babies.

Summary

- Birth of thalassemia major child can be prevented by generating awareness amongst masses, premarital counseling, carrier screening and prenatal diagnosis.
- Premarital screening is a successful approach for thalassemia prevention but is at present an up-coming service in India. However in present scenario antenatal screening can be the tool to identify women and couples who are at risk of having children with thalassemia major and other hemglobinopathies.
- Early screening in first trimester itself is crucial to prevent birth of thalassemia major child.
- Thalassemia screening needs to be incorporated in routine antenatal investigation protocol; all obstetricians should get thalassemia screening done as a mandatory test in antenatal patients along with routine hemoglobin testing to detect thalassemia trait and other haemoglobinopathies.
- In a developing country like ours, it is not economically viable to do HPLC for mass screening of beta thalassemia trait. It is advisable to use either NESTROFT or red cell indices or a combination of the two tests for mass screening programs.

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Safe Abortion Services: Key to Lowering the Maternal Mortality

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Every two hours a woman dies due to unsafe abortion which contributes to a significant 8% of the maternal mortality in India. Many of those who survive suffer from chronic debilitating diseases. Despite abortion being legal under certain conditions, a range of physical, economic, social and policy factors limit the availability and utilization of services for women. The RMNCH+A strategy of the GOI as part of the NHM aims to provide a woman centric comprehensive abortion care ensuring freedom of choice and right to access safe, standard and efficient services that take into account factors influencing women's health needs and her personal circumstances. Under the preview of reproductive rights both men and women have the right to choose and control their own reproductive functions however it's the providers duty to offer quality services without any bias while remaining within the legal framework.

The legal aspect…MTP Act.

The MTP act of India legalizes abortion services and defines 'when, 'where' and under 'what'condition abortion is permissible. It also offers protection to medical practitioners who otherwise would be penalized under the IPC sections 315-316 (tcw.nic.in/Acts/MTP-Act-1971.pdf)for any damage caused or likely to be caused in the process of termination if they remain within the act.

Place of termination

It can be carried out only in a hospital established and maintained by the government or a private hospital approved to the purpose by the government or District level committee (DLC). Medical Methods of abortion up to 7 weeks of gestation can be provided by an RMP under the MTP Act, from an OPD clinic with established linkage to an approved site. However a certificate to this effect by the owner of the site has to be displayed at the OPD clinic.

Documentation

Documentation of MTP procedures including medical methods of abortion is absolutely mandatory and provides protection for the provider as well as the acceptor. It includes filling up the following forms:

Form C- Consent form in which a voluntary informed consent should be taken. *Women who are 18 years old and above can give self-consent for the procedure. Spousal consent is not mandatory. However in case the woman is less than 18 years, under the POCSO 2012 Act, it is necessary to inform the police and prepare a medico legal document.*

Form I- Opinion form from the RMP regarding the indication for termination.

Form II- Monthly reporting form.

Form III- Admission register.

Before performing MTP, Form C & Form I have to be duly filled, which are then put in a sealed envelope with the assigned number from the admission register on it. Before 5th of every month the owner / Head of the hospital shall send a monthly statement of the cases to CMO of the district in Form II. An approved site shall maintain the case records (Form III- Admission register) and keep it for a period of 5 years from the date of last entry. It is an offense if reporting is not done. The provider shall get the protective cover of this legislation only when he or she fulfils all these requirements completely.

Any violation of the MTP Act can be punished with rigorous imprisonment for two to seven years. Those who are liable to punishment are:

- Termination of pregnancy by a person, who is not a RMP.
- Whoever terminates pregnancy in a place that is 'unapproved' [Sec. 5 (3)].
- Any person, being 'owner' of a place that is not approved, and doing or allowing the termination of pregnancy at such place [See. 5(4)].

The expression "owner" means any person who is the administrative head or otherwise responsible for the working or maintenance of a hospital or place, by whatever name (DM, MS, DP etc.) called. {Sec.5 (4) Explanation- 2}.

The other important standards for safe abortion services are:

Counselling

When a woman comes for an abortion she is likely to be

under physical as well as mental stress. During counselling it is essential to address the following aspects:

- Clear the doubts and thoughts about terminating this pregnancy.
- Provide information that an early abortion is safe and legalized up to 20 weeks of gestation.
- It is available in government facilities therefore she should not approach an unqualified abortion provider at unapproved sites .
- Help her select a method of termination, along with a contraceptive method of her choice.
- Post procedure counselling should include follow up advice, danger signs and symptoms regarding complications, self-care and referral for other reproductive health aspects if required.

Clinical assessment

It should include a detailed clinical history, general physical and pelvic examination, investigations to identify and take necessary steps to manage pre-existing medical/surgical conditions and timely referral. *USG is not mandatory unless indicated*. 85% ectopic pregnancies can be diagnosed with a careful history and examination. *If indicated USG must be done in accordance with the PCPNDT guidelines.*

Methods of termination

First trimester

Medical Methods of Abortion (MMA)

For women seeking termination of pregnancy up to 7 weeks of gestation the requisite protocol for surgical abortions as under the MTP Act is also applicable to MMA. The approved protocol for MMA as per the guidelines of MOHFW is shown in Table 1

Table1: Protocol for medical abortion up to 49 days

Day 1 …Mifepristone 200mg, 1 tablet orally
Day 3….Misoprostol 400 mcgm, oral/vaginal/sublingual/ buccal.
Day 15….ensure completion of procedure.

Mifepristone + Misoprostol (One tablet of Mifepristone 200mg (day 1) + 4 tablets of Misoprostol 200micrograms) comb pack has been approved by the CDSCO (Central drug standard control organisation), DCGI (Drug Controller General of India) for medical termination of intrauterine pregnancy for up to 63days.

If a woman chooses MMA she should be given the following information

- She needs to make a minimum of three visits to the facility.
- She has to follow a definite drug protocol. She should remain in the facility for 4-6 hours following misoprostol administration. She may have vaginal bleeding for 8-13 days.
- She has to stay within the accessible limits of the health facility. She may experience side effects of the drugs like nausea, vomiting, diarrhoea, fever, headache etc.
- A small percentage 3% may expel with mifepristone alone but the drug regime has to be completed.

Complications with MMA

- Severe vaginal bleeding i.e. soaking two or more pads for two consecutive hours requiring IV infusions/ blood transfusion and uterine evacuation.
- Incomplete abortion- if her condition is stable misoprostol 6oo mcgms oral can be administered. If bleeding continues even after this then perform vacuum aspiration.
- Continuation of pregnancy- it has to be terminated by vacuum aspiration in view of teratogenic effects of the drugs.

Contraindications for use of MMA

- Anaemia (Hb<8 gm %),
- Ectopic pregnancy,
- Severe renal, liver and respiratory disease;
- Angina & valvular heart disease that can lead to sudden cardiovascular collapse.
- It is also contraindicated in uncontrolled seizure disorder, glaucoma, inherited porphyrias, current anti-coagulant therapy, long term systemic corticosteroid therapy and allergy or intolerance to mifepristone/ misoprostol.

Surgical Methods of Abortion

Manual Vacuum Aspiration (MVA): It is a safe method of abortion up to 12 weeks of pregnancy. MVA syringe is a user friendly bi valve device which is hand operated. It has different colour coded cannulas for use according to the period of gestation. It facilitates visual inspection of the complete products of conception and availability of specimen for histopathology.

Electric Vacuum Aspiration (EVA): is typically used in centralized settings with higher case loads. Follow up visit should take place within two weeks after MMA / VA procedure.

Second trimester

There can be many social and economic pressures that push a woman to seek an abortion in the second trimester,

Table2: Methods of second trimester termination

Medical methods	Mechanical methods	Surgical methods
200 mg oral mifepristone is followed 36-48 hrs.later by 800mcg vaginal or 400mcg oral misoprostol. This is followed by 400 mcg vaginal or sublingual misoprostol every three hours. Total up to five doses including the first dose of misoprostol. WHO recommends this method as the safest method for second trimester termination however it is not yet approved by DCGI	Laminaria Tents: Made of hygroscopic material which swells up by absorbing cervical and vaginal secretions. They gradually dilate and soften the cervix and may initiate uterine contractions. It has been observed that the maximum dilatation is achieved in six to eight hours of instillation. Disadvantage is that they may lead to infection.	Dilatation & Evacuation: Less than 15 weeks pregnancy. Can be preceded by misoprostol/laminaria tent insertion/dinoprostone gel instillation for cervical priming.
Misoprostol alone. 400mcg vaginal misoprostol every three hours upto maximum five doses.	Foleys Catheter- Inserted in the cervical canal and filled with 5-10 ml saline in the balloon	Hysterotomy. A mini caesarean section performed in case of failure in the induction of abortion by other methods.
Extra amniotic ethacridine instillation supplemented by oxytocin. Not much in use due to non-availability of ethacridine lactate.	Both methods need augmentation with oxytocin	

though there is a higher risk of complications. It can be done with medical or surgical methods (Table2). Documentation is the same as in first trimester abortions.

Complications

Uterine perforation, shock, secondary haemorrhage, infection and failure of the method are the complications which may occur. These need to be managed as per established protocol. Delayed sequelae may be PID and Asherman, s syndrome. A follow up visit within two weeks of any of these procedures is appropriate. During follow up address any problems or side effects related to the treatment or contraceptive method.

Infection Prevention and disposal of conceptus

Follow universal precautions and all steps of instrument processing and waste management. Give broad spectrum antibiotics for 5 days following vacuum aspiration.

First trimester products of conception should be poured down a drain or buried with other liquid infectious waste, after disinfecting with chlorine solution. Second trimester products of conception should be disposed in yellow bag disinfected with bleach solution and then either sent for incineration or deep burial.

Postabortal contraception

Prompt return of ovulation can lead to the possibility of unwanted pregnancy very soon after an abortion even before the first post abortion menstruation. Commonly held misconceptions about contraceptive methods are a barrier in their acceptance in the community. All modern contraceptive methods can be safely provided immediately after MTP. Combined oral contraceptive pills can be started on day 3/day 15 of MMA and day 1 of surgical termination. *The continuation rate for post abortion insertion of IUD is good. It can be inserted along with vacuum aspiration and after confirmation of completed medical methods of abortion, provided the risk or presence of infection is ruled out*. Laparoscopic tubal occlusion should be done only with first trimester MTP; however abdominal tubectomy can be performed concurrently with second trimester MTP.

If the woman is not willing to accept contraceptive methods

- MTP should not be denied to any woman irrespective of her decision to refuse concurrent contraception, as she is likely to go anywhere, probably to an illegal abortion provider where she may suffer complications.
- Assure the woman she will not be refused MTP.
- Counsel her again on post abortal contraception, at a suitable time, perhaps when she comes again for follow up. Also encourage her to bring her spouse or partner.

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CLINICAL UPDATE

First Trimester Screening for Aneuploidies

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Aneuploidy is the most common chromosomal abnormality in humans, and is the leading genetic cause of miscarriage and congenital birth defects. Aneuploidy occurs in 0.3% of newborns, 4% of stillbirths, and more than 35% of all human spontaneous abortions[1]. The antepartum detection of fetal aneuploidy is one of the major goals of prenatal screening programs. Sonographic findings, maternal serum analyte markers, and parental risk factors for genetic disease are all considered in determining the risk that the fetus is affected. However, invasive testing is done to obtain a definitive karyotypic diagnosis if indicated.

There has been a paradigm shift in the diagnosis of chromosomal anomalies in a fetus from the second trimester to late first trimester over the years. This is mainly due to advances in ultrasound technology combined with biochemical screening.

First trimester screening

The main objective of a screening procedure is to detect risk for a disease (aneuploidies here) in a population.

The impact of a positive screening test depends on the pretest (a priori) risk of an affected pregnancy. In screening, patient specific risks are obtained by multiplying maternal age and gestational age related risk (derived from software/ charts) by a likelihood ratio (LR). For binary risk factors that are either present or absent, LR is calculated as sensitivity/ false positive rate whereas for continuous variables such as serum marker measurements, it is calculated from log Gaussian distributions of normal and affected pregnancies. Once LR is determined, it is used to modify the priori risk[2].

All women regardless of age should have counselling for prenatal genetic screening for aneuploidies.

Benefits of first trimester screening

- Early identification of the pregnancy at risk for fetal aneuploidies and anatomic defects like cardiac, neural anomalies.
- The option of earlier diagnosis by chorionic villus sampling, if available.
- Early diagnosis allows the couple adequate time for decision making; privacy and if chosen, safer methods of pregnancy termination.

It is carried out at 11^{+0} - 13^{+6}weeks period of gestation. The gestational age is best established by measuring the crown rump length. Various parameters included in screening are:

Maternal age: Women 35 years and older were typically considered to be at highest risk of having a child with trisomy. However, maternal age screening is inferior to newer screening approaches that use ultrasound and serum markers. Turner syndrome is unrelated to maternal age. ACOG recommends that maternal age of 35 years should no longer be used as a cut-off to determine the option of offering screening vs invasive testing.

The first trimester screening test consists of three markers:

- Maternal serum beta human chorionic gonadotropin (beta-hCG)
- Maternal serum pregnancy-associated plasma protein-A (PAPP-A)
- Ultrasound measurement of nuchal translucency (NT)

These three markers comprise the **"combined test"** and together with maternal age provide a patient-specific risk. The combined test detects approximately 85 % of Down syndrome with a false positive rate of 5 %.[3]

The two markers most consistently being used for screening include free Beta HCG and PAPP A.

1. **Beta-HCG-** Beta-HCG levels are, on an average, twice as high in pregnancies affected with fetal Down syndrome than in euploid pregnancies. Beta-hCG can be assayed in its free or total form.
   - Free beta-hCG is effective at $9^{0/7ths}$ to $13^{6/7ths}$ weeks, and the performance improves as the gestational age advances within this interval
   - Total beta-hCG is equally effective at $11^{0/7ths}$ to $13^{6/7ths}$ weeks.[3,4]
2. **PAPP A-** "Pregnancy Associated Plasma Protein A" is a complex, high molecular weight glycoprotein. Its levels are lower in pregnancies affected with fetal Down syndrome. In contrast to beta-hCG, PAPP-A performance decreases with increasing gestational age.[4] In euploid pregnancies, the average adjusted value for both free β-hCG and PAPP-A is 1.0 MoM

at all gestations, whereas in trisomy 21 the average free β-hCG is 2.0 MoM and the average PAPP-A is 0.5 MoM. In trisomies 18 and 13, both these markers tend to be lower than in euploid pregnancies.

3. **Ultrasound markers**- The basic and the most important ultrasound parameter is nuchal translucency. The risk is calculated by using software which includes other parameters like gestational age, maternal age, ethnicity, smoking, invitro fertilization and number of fetuses with chorionicity. Consultant who is performing NT scan must be properly trained, preferably certified by Fetal Medicine Foundation, United Kingdom. **Nuchal Translucency (Fig1)**: Nuchal Translucency (NT) objectively evaluates the subcutaneous fluid located between fetal head, neck, and upper torso. Magnification of image should be such that fetal head and upper torso occupies 75 % of the image. The other ultrasound parameters which are evaluated in the first trimester are- fetal nasal bone (Fig2), fetal facial angle, ductus venosus flow and tricuspid regurgitation[5] **(for details refer to next article). Three dimensional ultrasound** (3 DUS) is increasingly being used in obstetric practice with an advantage in first trimester that it allows visualization of facial planes especially for nuchal translucency and nasal bone that are difficult to obtain by 2 DUS.[6] Additional parameters being used by some ultrasonologists include maxillary length, ear length, megacystis, flat iliac wings and early onset growth restriction. A detailed ultrasound for any structural, neural or cardiac defects is also carried out

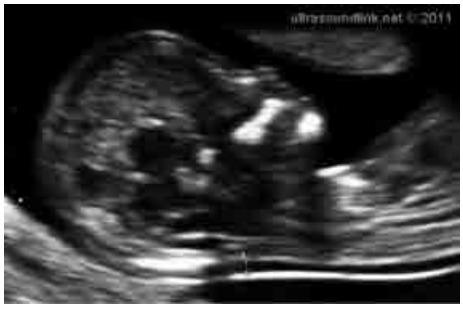

Fig 1: Nuchal Translucency

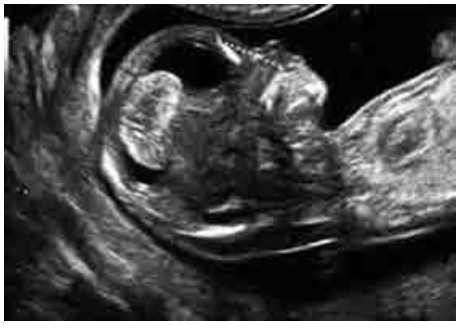

Fig 2: Nasal Bone

Other first trimester screening tests which enhance the performance of the first trimester combined test are:[7]

- Placental growth factor (PlGF)
- Alpha-fetoprotein (AFP)
- Inhibin-A:

Inhibin- A levels are elevated in pregnancies affected with fetal Down syndrome whereas PIGF and AFP levels are, on an average, lower in pregnancies affected with fetal Down syndrome.

Other screening tests/strategies

Integrated test

Integrated testing involves both first and second trimester markers to provide a single estimate of risk for aneuploidies. The information of first trimester screening results are kept hidden from patient until a second trimester serum sample is drawn and the quadruple test markers (alpha fetoprotein [AFP], unconjugated estriol [uE3], inhibin A and beta-hCG) are done. Beta-hCG can be used as a marker in either the first or second trimester. The advantage of the integrated test is that at an equivalent detection rate, it has a substantially lower false positive rate than the combined or quadruple test.

Serum integrated test: The serum integrated test is the same as the full integrated test, but without ultrasound measurement of nuchal translucency

The disadvantage of the integrated test is that final test results are not available until the second trimester. This problem can be mitigated by using a sequential approach, either step-wise or contingent (Table2).

Step-wise sequential screening

The step-wise sequential screening process involves first trimester screening followed by counselling and offering invasive testing to those women who are at high risk (1 in 50). Women whose screening does not categorize them as very high risk do not receive early results and go on to complete the second trimester portion of the test.

Contingent Screening

Women are divided into high, moderate and low risk groups. Those at highest risk, 1% are offered invasive testing. Those at moderate risk (15-20%) undergo second trimester screening. The remaining 80-85% who are at below 1:1000 risk receive negative screening test results and have no further testing.

Non invasive prenatal testing (NIPT)

Non-invasive prenatal testing that uses cell free fetal DNA from the maternal plasma offers tremendous potential as a screening tool for fetal aneuploidy. Circulating free fetal

Table 2: Selected Down syndrome screening tests and their detection rates.[8]

STRATEGY	ANALYTES	DETECTION RATE (%)
First trimester screen	NT, PAPP A, hCG or free βhCG	79-87
NT	NT alone	64-70
Triple Test	MSAFP, hCG, uE3	61-70
Quadruple Test	MSAFP, hCG, uE3, Inhibin	74-81
Integrated Screen	First trimester screen and Quad Test: Results withheld until quad test completed	94-96
Stepwise sequential screen	First trimester screen and quad test: • 1% offered diagnostic test after 1st trimester screen • 99% proceed to quad test, result withheld until quad test completed	90-95 %
Contingent sequential screen	First trimester screen and quad test: • 1%: Diagnostic test • 15 %: Quad test ; results withheld until quad test completed • 84 %: No additional test after 1st trimester screen	88-94%
Cell Free DNA testing (described below)	No Analytes: Parallel genome testing	98%

DNA which comprises approximately 3-13 % of the total cell free maternal DNA, is thought to be derived primarily from the placenta and is cleared from the maternal blood within hours after child birth. Fetal Down syndrome and other autosomal trisomies may be detected from 10 weeks by isolating cell free fetal DNA from maternal plasma using massively parallel sequencing or chromosome selective sequencing. Detection rates for trisomies 21, 18, 13 are approximately 98 % with a false positive rate of 0.5 % or less.[8]

Indications:[9]

- Maternal Age ≥ 35 years at delivery
- Fetal ultrasonographic findings indicating an increased risk of aneuploidy
- History of a prior pregnancy with a trisomy
- Positive test result for aneuploidy , including first trimester, sequential, or integrated screen or a quadruple screen
- Parental balanced Robertsonian translocation with increased risk of fetal trisomy 13 or 21.

A negative test does not ensure an unaffected pregnancy. A patient with positive test should be offered genetic counselling followed by invasive testing. Also known as NIFTY (Non Invasive Fetal TrisomY Test), the cost of NIPT in India is around Rs. 20 k – 30 k.

Screening for chromosomal defects in multiple gestations

Twin gestation screening algorithms, which include maternal serum biochemistries and ultrasound markers, yield similar detection and false positive rate to those used in singletons. Efficiency of screening in higher order multiple gestations is less well defined.

Newer advances

A new biochemical marker for aneuploidies is ADAM12 (A disintegrin and metalloprotease). In trisomic pregnancies maternal serum levels during the first trimester are lower than in euploid pregnancies[10].

After a positive screening test, genetic counselling is required to discuss the results along with diagnostic and management options. *Women with positive screening results are offered definitive fetal chromosomal analysis (karyotype) by chorionic villus sampling (CVS) if they present prior to 14 weeks of gestation.*

Chorionic villus sampling

Chorionic villus sampling is a test where a small piece of chorionic frondosum (placental tissue) is removed and used for genetic testing. It should not be performed before 10 weeks because of the risk of transverse limb reduction defects. There are two approaches- transabdominal vs transcervical. The risk of total pregnancy loss and spontaneous miscarriages is higher with transcervical CVS.

Indications include an abnormal first trimester screening, fetal abnormality on ultrasound or a previous child with chromosome abnormality, parents with chromosome translocation, skin disorders like epidermolysis bullosa dystrophica, albinism and ichthyosis.

Disadvantages and risks of CVS:

- Confined placental mosaicism
- Maternal contamination with decidual tissue
- Pregnancy loss: 1-2 %
- Limb or facial anomalies.

Conclusion

If a couple presents to a clinician early in pregnancy, proper screening and testing can diagnose major aneuploidies affecting the fetus. A multidisciplinary approach involving the obstetrician, fetal medicine expert, a geneticist, a genetic counsellor, paediatrician and lab technician is required to achieve the aim of a healthy pregnancy and a healthy neonate.

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"A baby fills a place in your heart that you never knew was empty."
- Author Unknown

"The moment a child is born, the mother is also born. She never existed before. The woman existed, but the mother, never - Osho

CLINICAL UPDATE

Relevance of the 11-14 Weeks Scan

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Advances in biochemical screening combined with the excellent display of fetal dysmorphology afforded by technological advances in ultrasound equipment have resulted in a paradigm shift in the diagnosis of chromosomal abnormalities in the fetus, from the second trimester to the late first trimester. The advantages of early diagnosis, apart from the ease and safety of first trimester termination, include social privacy and a fairly lesser degree of parental fetal bonding. From a perspective of accuracy as well, first trimester screening for aneuploidy far exceeds that of the second trimester triple test and genetic sonogram. Equally importantly, nuchal thickening, the cornerstone of diagnosis, may regress by 14 weeks of gestation. Additionally, the 11-13 weeks 6 days scan offers a fairly good delineation of normal fetal anatomy[1], identification of several major structural anomalies, confirmation of chorionicity and amnionicity in multifetal pregnancies and holds great promise for screening for prematurity, preeclampsia and neural tube defects. Recent data have shown chorion villus sampling after 10 weeks to be as safe in experienced hands as amniocentesis and this has pushed the advantages of first trimester screening further. This treatise discusses techniques and clinical implications of ultrasound evaluation in the late first trimester.

Parameters for first trimester screening

Ultrasound parameters for the detection of Down's syndrome in the first trimester include the nuchal translucency (NT) as the most well defined and studied parameter, evaluation of the nasal bone (NB), ductus venosus (DV) flow velocity waveform, tricuspid regurgitation (TR) and fetal heart rate. Each parameter has well defined criteria to be fulfilled for accurate quantification and these are discussed in the following sections. Additional parameters that have received attention in the literature and are used by some groups include maxillary length, ear length, megacystis, flat iliac wings and early onset growth restriction.

Biochemical parameters that are currently in wide use include PAPP-A and free beta hCG **(refer to previous article for details).**

Other parameters that the software accounts for are the gestational age assessed by the crown-rump length, maternal age, ethnicity, smoking, IVF and number of fetuses with chorionicity.

Nuchal translucency

The term nuchal translucency refers to the anechoic stripe visible just internal to the skin stripe at the level of the back of the fetal neck. It is consequent to the subcutaneous accumulation of fluid in the fetal neck in the first trimester. The term translucency is used irrespective of thickness, extent or presence of septations. The incidence of chromosomal abnormalities and structural anomalies is related to the thickness rather than the appearance. The translucency usually resolves in the second trimester but may persist as a cystic hygroma or nuchal edema. Several strict criteria are to be met for an accurate assessment of the nuchal translucency. The fetus should be in a true sagittal section. An ideal image includes nasal skin, the echogenic tip of the nose, the nasal bone, the palate in a rectangular shape, the translucent diencephalon in the center and the nuchal translucency posteriorly in the same image. The crown-rump length should range between 45-84 mm. Magnification of the image should be such so as to include only the head and upper third of the thorax. The head should be in a neutral position. Care has to be taken to distinguish between the amnion and nuchal skin. It is also important to exclude the presence of the umbilical cord near the fetal neck. After all these criteria are fulfilled, the anechoic region of the lucency should be measured at its widest part. This should be done with the "+" calipers and not the "x" calipers. This makes it easy to ensure that the placement merges with the white of the margins of the lucency and is not in the lucent area. Several readings of the translucency should then be taken and the highest should be reported.

Anomalies encountered in fetuses with a thickened nuchal translucency include chromosomal anomalies, cardiac defects, pulmonary malformations, skeletal dysplasias, congenital intra-uterine infections, metabolic disorders and hematological disorders.

The NT increases with gestational age and, therefore, it is necessary to interpret it in the perspective of the crown-rump length. Normal values range from 1.2 to 2.1 mm at 45 mm upto 1.9 to 2.7 mm at 84 mm[2]*. A small but definite number of normal fetuses have a thickened nuchal translucency. A pregnancy should, therefore, never be terminated on the basis of this finding alone.* In screening, patient-specific risks are obtained by multiplying the

maternal age and gestational age related risk (derived from software/charts) by a "likelihood ratio" (LR). This LR, unlike the biochemical value of Multiples of Median (MoM), depends on the difference[3] (Delta value in mm) in the measured NT from the median NT for that crown-rump length. Multiple ethnicity specific charts are available in standard textbooks and free of cost on the Internet.

There is no association between thickened NT and maternal age and, therefore, these can be combined to enhance the detection rates in a screening program.

Fetal nasal bone

The nasal bone is absent or hypoplastic in 69% of fetuses with trisomy 21 in the 11-13 weeks 6 days scan period[4]. It is, therefore, useful to assess it for screening for trisomy 21 during this period. It must be remembered, however, that the nasal bone may be absent or hypoplastic in 1.4% of chromosomally normal fetuses, in a significant number of normal Afro-Caribbeans, and that the incidence of absence decreases with gestational age and CRL[5]. The incidence increases with an increase in NT thickness. The nasal bone is absent in 50% of trisomy 18 fetuses and 40% of trisomy 13 fetuses.

Technically, the section for assessment and measurement is the same as for the NT. The transducer should be parallel to the direction of the nose. Three lines are clearly evident in this section. These include the skin represented by the top line, the echogenic nasal bone just below this which is thicker than overlying skin and a third line in front of the nose which represents the tip of the nose. The nasal bone is regarded as present if it is more echogenic than the overlying skin. It is regarded as absent if it is either not seen, or its echogenecity is equal to or less than the skin. Although the Fetal Medicine Foundation does not recommend measuring the nasal bone and assessing it subjectively, some authors have published reference charts.

Assessment of the nasal bone increases the detection rate of trisomy 21 from 90% to 93% and decreases the false positive rate from 3% to 2.5%

Ductus venosus

Abnormal ductus venosus flows in the 11-13 weeks 6 days scan is associated with chromosomal anomalies, cardiac abnormalities and adverse fetal outcomes[6]. 80% of trisomy 21 fetuses and about 5% of normal fetuses show reversed flow in the a wave[7]. It must be noted, however, that in about 80% of fetuses with reversed 'a' waves the pregnancy has a normal outcome

The Fetal Medicine Foundation recommends the fulfilling of several strict criteria to ensure an accurate quantification. The fetus should be still. The thorax and abdomen should occupy the entire screen. A right ventral mid-sagittal section has to be obtained. Color or power Doppler flow mapping should be used to delineate the umbilical vein, ductus venosus and fetal heart. The sample gate should be between 0.5-1 mm. It should be placed in the area of highest aliasing. The insonation angle should be less than 30°. Filter settings should be set at a low range of 50-60 Hz. The sweep speed should be high (2-3 cm/s) so that the waveform is widely displayed. The criteria are numerous but must be fulfilled for adequate assessment of the 'a' wave in the flow velocity waveform.

This marker has a weak correlation with abnormal NT measurements and, therefore, serves as an independent marker for improving screening. However, delineation requires operator skill and time, and this marker, therefore, is being used largely by tertiary centers to fine tune borderline risks. Inclusion of this marker for first trimester screening improves the detection rate from 90-95% and reduces the false positive rate from 3% to 2.5%.

Tricuspid regurgitation

Evaluation of tricuspid flow has been shown in recent studies to enhance performance of first trimester screening[8]. The documentation of tricuspid regurgitation increases the risk for trisomy 21 as well as for cardiac defects. The incidence is related to nuchal thickening and decreases with increasing CRL.

The fetus should not be moving. An apical four chamber view is obtained and magnified so that the entire screen is occupied by the thorax. Color flow mapping is not used. The insonation angle should not exceed 30°. The sample volume is positioned across the tricuspid valve. The gate should be 2-3 mm wide. The sweep speed should high: 2-3 cm/sec. TR is diagnosed if it is found during at least half of the duration of systole and with a velocity of greater than 60 cm/sec. The latter cut-off is important because aortic or pulmonary arterial blood flow can produce a velocity of up to 50 cm/sec at this period of gestation.

Fetuses with TR that have a normal karyotype should be followed up carefully to assess for cardiac anomalies.

Other parameters

Several other parameters have received attention over the years and are generally not in routine or specialized use.

Underdevelopment of the maxilla is present in 50% of fetuses with trisomy 21. These fetuses have a median maxillary length that is 0.7 mm less than the normal median for crown rump length. The independent significance of this length is diluted by the observation that there is a very significant association between maxillary length and nuchal thickness as also between maxillary length and hypoplasia of the nasal bone. It is, therefore, not in routine use.

Trisomy 21 fetuses have a short ear length. However, the degree of deviation from the normal median for CRL is too small for this to be useful. Similar logic exists for femur and humeral lengths during the 11-13 weeks 6 days scan window.

A single umbilical artery shows a sevenfold increase in the risk of trisomy 18 but no such association with trisomy 21.

An abnormal longitudinal urinary bladder length (megacystis) is defined as a length of 7 mm or more. When the length is 7-15 mm, the incidence of trisomy 13 and 18 is 20%. In chromosomally normal fetuses there is spontaneous resolution of megacystis in 90% of cases. When the bladder diameter exceeds 15 mm the incidence of chromosomal anomalies is 10%. The presence of megacystis increases the likelihood of trisomy 13 and 18 by a factor of 6.7.

In trisomy 21 the fetal heart rate (FHR) is mildly increased and is above the 95th centile in about 15% of cases. This low incidence erodes its utility in screening. In trisomy 18 the FHR is mildly decreased and is below the 5th centile in about 15% of cases. In trisomy 13 the FHR is substantially increased and is above the 95th centile in 85% of cases.

Dysmorphology diagnosis in the first trimester

Fetal crown-rump length and transvaginal delineation remarkably alter systematic and confident delineation of presence of a fetal organ, absence of a fetal structure and identification of an anomaly[9]. Between 45-62 mm CRL, delineation of the cranium, cranial contents, face, neck, spine, heart, stomach, bowel, urinary bladder, anterior abdominal wall and limb segments is about 30% by transabdominal scans and 45% by transvaginal scans. Between 63-84 mm CRL, the corresponding figures are 52 and 84 %. When high frequency (12 MHz) transvaginal scans are performed on zoomed in fetal regions such as face, fingers and vascular anatomy, these are better delineated (92%). Delineation of fetal face, limb segments and vasculature is considerably superior with 3D and 4D surface rendering and sectional plane studies.

Remarkably good images of the four chamber view, aortic root, aortic arch, pulmonary trunk, great artery cross-over view and the three-vessel view are possible with Volume Contrast Imaging transvaginal imaging, 4D transvaginal scanning and Spatio-Temporal Image correlation between 13 and 14 weeks of gestation. The detection rate of cardiac anomalies went up to 62% with these additional techniques.

In patients with a clinical risk marker and in patients with a thickened NT but a normal karyotype it is worth considering a fetal echocardiography at 13-14 weeks of gestation. It is important to remember that the delineation of cardiac anatomy is far better between 13-14 weeks when compared to 11-13 weeks[10,11].

Transvaginal scanning at 13-14 weeks of gestation enhances the accuracy of identifying structural abnormalities particularly when 4D studies are employed.

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EVIDENCE BASED GUIDELINES

Recent Guidelines for Management of Ectopic Pregnancy

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Ectopic pregnancy is the commonest cause of maternal mortality in first trimester of pregnancy. The incidence of ectopic pregnancy in India has been reported as 3.12 per 1000 pregnancies in a multicentric case control trial by ICMR.

The management of ectopic pregnancy has undergone a significant change in last 3 decades due to availability of accurate and rapid serum human chorionic gonadotropin(β-hCG)assays, and introduction of high resolution transvaginal ultrasound(TVUS), which has resulted in early diagnosis and treatment of this potentially life threatening condition.

Currently, the approach focuses on diagnosing ruptured or suspected ectopic pregnancy versus normal or failing intrauterine pregnancy (IUP) by using early TVUS, then obtaining a serum β-hCG level on patients with indeterminate results on ultrasonography.

Who is at risk of ectopic pregnancy?

Women who have abnormal fallopian tubes are at higher risk of ectopic pregnancy. Abnormal tubes may be present in women who have had the following conditions:

- Pelvic inflammatory disease
- Previous ectopic pregnancy
- Infertility
- Pelvic tuberculosis
- Pelvic or abdominal surgery
- Endometriosis
- Sexually transmitted diseases
- Prior tubal surgery such as tubal sterilization, recanalization
- Other factors that increase a woman's risk of ectopic pregnancy- cigarette smoking; intrauterine DES exposure and increasing maternal age

How to diagnose?

The most critical step in the beginning of the workup is to have a high clinical suspicion for ectopic pregnancy- in any woman of childbearing age presenting with pain abdomen, bleeding per vagina irrespective of amenorrhea, a urine pregnancy test must be offered.

Pelvic sonography is usually conducted first with the transabdominal approach, which can reliably identify IUP at a β-hCG level above 6500 mIU/mL or with the transvaginal approach, which can extend the discriminatory zone down to 1500 mIU/mL)[1]. M-mode imaging is useful for measuring the fetal heart rate. Color Doppler ultrasonography can help identify some ectopic pregnancies by identifying a placental blood flow around gestational sac giving "ring of fire" appearance (corpus luteum cyst may also give same appearance). Attention should be paid to the adnexa, even when an intrauterine pregnancy is visualized, to rule out the rare heterotopic pregnancy, especially in patients with a history of assisted reproduction.

Definitive ultrasonographic findings of ectopic pregnancy are empty uterus with a tubal ring (bagel ring), complex adnexal mass, a moderate-to-large amount of free fluid or a definite extrauterine sac with fetal node. Failure to diagnose intra or extrauterine pregnancy with positive UPT suggests pregnancy of unknown location (PUL) requiring further investigations

Patients with indeterminate ultrasonographic findings of empty uterus or with gestational sac < 8 mm without a yolk sac with normal adnexa should have a β-hCG level drawn and should be followed up closely by serial β-hCG level estimation and ultrasonography.

Role of serial β-hCG

- β-hCG above discriminatory zone with an empty uterus always suggests ectopic pregnancy
- An increase in β-hCG of less than 53% in 48 hours confirms an abnormal pregnancy (ACOG 2012, Level B)
- Rapidly increasing β-hCG levels with empty uterus signal the danger of imminent rupture of ectopic pregnancy

Serum Progesterone- Serum progesterone levels tend to be stable over time during the first trimester, and concentrations are higher in a normal intrauterine pregnancy (IUP). A single serum progesterone level above 22ng/ml has been used alone to discriminate between normal and failing IUP and level <5ng/ml certainly suggests an abnormal pregnancy[2]. However, it cannot accurately discriminate between IUPs and ectopic pregnancies. It also cannot reliably diagnose ectopic pregnancy in conjunction with an indeterminate sonogram.

Dilation and curettage- Dilation and curettage (D&C) can be used to rule out ectopic pregnancy by determining the presence of chorionic villi. The obvious drawback to its frequent use is that a certain number of normal intrauterine pregnancies will be aborted. But it may be an option in the further workup of pregnancy of unknown location when the pregnancy is undesired. A significant fall in level of β-hCG after 12 hours of D&C, suggests IUP.

Culdocentesis- Culdocentesis was previously used to diagnose the presence of free fluid in the pouch of Douglas and continues to be diagnostic in the peripheries where ultrasound facility is not available. However, ultrasonography is noninvasive and has largely replaced culdocentesis where available.

Management of ectopic pregnancy

Over the past decade the treatment of ectopic pregnancy has shifted from a radical surgical approach to more conservative medical treatment due to diagnosis at an early stage. However the treatment has to be individualized depending on clinical situation, desire for fertility and choice of patient. *Informed written consent of the patient is required before any treatment.* The available options are- medical management, surgical management and expectant management

Medical management

Based on various randomised trials (ACOG Level A Evidence)[3] it has been seen that in comparing systemic methotrexate (MTX) with tube-sparing laparoscopic surgery, there is no difference in overall tubal preservation, tubal patency, repeat ectopic pregnancy, or future pregnancies. *Offer systemic methotrexate as a first-line treatment to women who are able to return for follow up and who meet the following: (ACOG, NICE 2012)*[3,4]

- no significant pain
- an unruptured ectopic pregnancy with an adnexal mass smaller than 35 mm with no visible heartbeat
- a serum β hCG level less than 1500 IU/litre
- no intrauterine pregnancy (as confirmed on an ultrasound scan).

Offer surgery where treatment with methotrexate is not acceptable to the woman

NICE 2012 also suggest the following in addition to ACOG guidlienes:

Offer surgery as a first-line treatment to women who are unable to return for follow-up after methotrexate treatment or who have any of the following:

- an ectopic pregnancy and significant pain
- an ectopic pregnancy with an adnexal mass of 35 mm or larger
- an ectopic pregnancy with a fetal heartbeat visible on an ultrasound scan
- an ectopic pregnancy and a serum hCG level of 5000 IU/litre or more.

Offer the choice of either methotrexate or surgical management to women with an ectopic pregnancy who have a serum hCG level of at least 1500 IU/litre and less than 5000 IU/litre, who are able to return for follow-up and who meet all of the following criteria:

- no significant pain
- an unruptured ectopic pregnancy with an adnexal mass smaller than 35 mm with no visible heartbeat
- no intrauterine pregnancy (as confirmed on an ultrasound scan).

Advise women who choose methotrexate that their chance of needing further intervention is increased and they may need to be urgently admitted if their condition deteriorates.

How to give methotrexate?

- Single-dose regimen protocol
- Two-dose regimen protocol
- Fixed multidose regimen protocol - with an hCG level of 5,000 mIU/mL or higher, multiple doses of methotrexate may be appropriate (Level B) (Table1).

Side effects of methotrexate

Methotrexate morbidity is usually dependent on the dose and duration of treatment. Because of its effect on rapidly dividing tissues, gastrointestinal side effects, such as nausea, vomiting, and stomatitis, are the most common. For these, antacids can be given and viscous lidocaine can be localy applied. Elevation of liver enzymes usually is seen only with multidose regimens and resolves within 2 weeks after discontinuing methotrexate use or increasing the rescue dose of folinic acid. Alopecia is a rare side effect with the doses used to treat ectopic pregnancy.

Precautions during treatment

- Avoid alcohol and folate containing medicine
- Avoid sexual intercourse and vaginal examination due to risk of rupture
- Avoid onions, leeks, cabbage and other gas forming vegetables to prevent gastrointestinal upsets.

Absolute Contraindications to Methotrexate Therapy

- Breastfeeding
- Overt or laboratory evidence of immunodeficiency
- Alcoholism, alcoholic liver disease, or other chronic liver disease

- Pre-existing blood dyscrasias, such as bone marrow hypoplasia, leukopenia, thrombocytopenia, or significant anemia
- Known sensitivity to methotrexate
- Active pulmonary disease
- Peptic ulcer disease
- Hepatic and renal disorders

Relative Contraindications to Methotrexate Therapy

- Gestational sac larger than 3.5 cm
- Embryonic cardiac motion

Note: 1. *Day 4 β-hCG may increase initially after methotrexate therapy and patient may experience little pain abdomen without rupture due to lysis caused by methotrxate and tubal distension by blood. Pain can usually be controlled with acetaminophen. Nonsteroidal antiinflammatory drugs (eg; ibuprofen) should be avoided due to the risk of an interaction between NSAIDs and methotrexate. Almost 75% of women experience abdominal pain following treatment (RCOG, 2010). Avoid pregnancy for 3 months after MTx treatment.*

2. Anti-D Rhesus prophylaxis: non-sensitised women who are Rhesus negative with a confirmed or suspected ectopic or suspected ectopic pregnancy should be offered anti-D immunoglobulin 250 IU(50 micrograms) as soon as possible (RCOG, 2010).[5]

Surgical management

Surgical treatment is indicated in ruptured tubal pregnancy, patient not desirous of further pregnancy or if patient is not willing for medical management.

Laparotomy vs laparoscopy

Management of tubal pregnancy in the presence of haemodynamic instability should be by the most expedient method and in most cases it is laparotomy (RCOG 2010, LEVEL -C)[5].

A laparoscopic approach to the surgical management of tubal pregnancy, in a haemodynamically stable patient is preferable to an open approach (RCOG 2010, LEVEL -A)[5].

Salpingectomy vs salpingostomy

In the presence of a healthy contralateral tube there is no clear evidence that salpingotomy should be used in preference to salpingectomy (RCOG 2012, LEVEL –C)[1].

Data from various studies suggest salpingotomy increases the chance of persistent ectopic and recurrent ectopic pregnancy. Laparoscopic salpingotomy should be considered as the primary treatment when managing tubal pregnancy in the presence of contralateral tubal disease and the desire for future fertility (RCOG 2012, LEVEL -C)[1].

Weekly quantitative β-hCG is required until the levels reach non pregnant level to rule out persistent ectopic pregnancy which occurs in 5-8% of patients following salpigotomy. When salpingotomy is used for the management of tubal pregnancy, protocols should be in place for the identification and treatment of women with persistent trophoblast. (RCOG2012, LEVEL -C)

Persistent Ectopic Pregnancy

It is a complication of conservative surgery for tubal ectopic pregnancy when removal of pregnancy is incomplete and residual trophoblast continues to survive. Diagnosis is made by lack of fall, plateau or rise in β-hCG.

Table1: Regimes of methotrexate treatment

Methotrexate Therapy for Primary Treatment of Ectopic Pregnancy ACOG, RCOG (2012)	
Regimen	**Surveillance**
Single dose[a] Methotrexate, 50 mg/m^2 IM	Measure β-hCG levels on days 4 and 7: • If difference ≥15 percent, repeat weekly until undetectable • If difference < 15 percent between day 4 and 7 levels, repeat methotrexate dose and begin new day 1 • If fetal cardiac activity present day 7, repeat methotrexate dose, begin new day 1 • Surgical treatment if β-hCG levels not decreasing or fetal cardiac activity persists after three doses methotrexate
Two dose Methotrexate, 50 mg/m^2 IM, days 0, 4	Measure β-hCG levels on days 4 and 7 after the last dose Then, follow-up as for single-dose regimen
Variable dose (up to 4 doses) Methotrexate,1 mg/kg IM, days 1, 3, 5, 7 Leucovorin, 0.1 mg/kg IM, days 2, 4, 6, 8	Measure β-hCG levels on day 1, 3, 5, and 7. Continue alternate-day injections until β-hCG levels decrease ≥15 percent in 48 hours, or four doses of methotrexate given. When β-hCG levels decrease ≥15 percent then weekly β-hCG until undetectable.
*Failure of the hCG level to decrease by at least 15% from day 4 to day 7 after methotrexate administration is considered treatment failure requiring therapy with either additional methotrexate administration or surgical intervention. Post-treatment hCG levels should be monitored until a nonpregnancy level is reached (Level B). [a] *Preferred by surgeons. IM = intramuscular.*	

Different protocols are there to diagnose persistent ectopic when:

- β-hCG level ≥ 65% of pre surgery level 48 hours of surgery.
- β-hCG level >10% of pre surgery level on tenth day of surgery.

Undiagnosed persistent ectopic may lead to life threatening haemorrhage. Methotrexate can be given at the time of salpingostomy to reduce the chance of persistent ectopic; however follow up with β-hCG is still required

Expectant management

Expectant management is an option for clinically stable women with minimal symptoms and a pregnancy of unknown location (RCOG 2012, LEVEL –C) (Table2).

Table2: Protocol for Expectant Management

Expectant management	β-hCG levels	Follow up
	Till 1000mIU/ml	• Repeat β-hCG every 48 -72 hrs till undetectable • Active management if β-hCG increases or plateaus • TVS weekly

Expectant management is an option for clinically stable asymptomatic women with an ultrasound diagnosis of ectopic pregnancy and a decreasing serum hCG, initially less than serum 1000 IU/l. (RCOG 2012, LEVEL –C)

Conclusion

Although the incidence of ectopic pregnancy is rising, the maternal mortality due to ectopic is decreasing. This is due to increased awareness among doctors and access to newer diagnostic tools for early diagnosis.

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REVIEW ARTICLE

Recurrent Pregnancy Loss: Challenge for the Clinician

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Recurrent pregnancy loss (RPL) is a stressful anxious time in the life of couples seeking parenthood and a formidable clinical challenge to their physician. Spontaneous sporadic abortions occur in approximately 15% of clinically diagnosed pregnancies while three or more recurrent abortions occur in 1% of the population.

What is RPL?

The traditional definition of recurrent pregnancy miscarriage includes three or more spontaneous, consecutive pregnancy losses before 24 weeks of gestation (RCOG)[1]. Pregnancy of unknown location and biochemical pregnancies are included as they have the same negative impact on future live birth as intrauterine pregnancy losses.

The American Society of Reproductive Medicine (ASRM) has defined RPL as "a distinct disorder defined by two or more failed clinical pregnancies as documented by ultrasonography or histopathological examination[2].

European Society of Human Reproduction and Embryology (2014) proposed that RPL is "repeated pregnancy loss" but did not specify number of losses and location of pregnancy and advised a detailed obstetric history to be taken[3].

In practice the terms RPL and Recurrent Miscarriage (RM) are often used interchangeably. Since the risk profile of recurrent miscarriage after 2 successive losses is similar to that of miscarriage in women after 3 successive losses; it is advisable to start an evaluation after 2 or more consecutive spontaneous miscarriages to determine the cause of their pregnancy loss, especially when the woman is older than 35 years of age, or when the couple have a history of infertility.

Couples with primary RPL have never had a previous viable infant, whereas those with secondary recurrent loss have previously delivered a pregnancy beyond 20 weeks and then suffered subsequent losses.

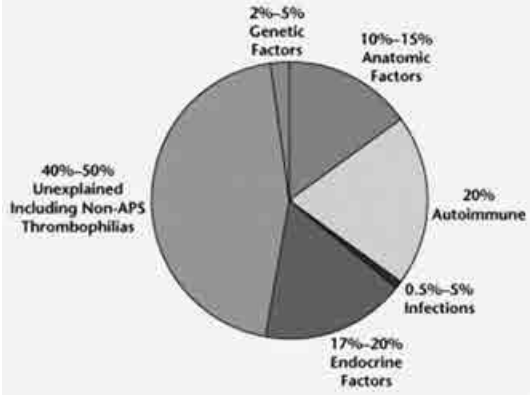

Fig 1: Causes of RPL

Causes of RPL

The causes of RPL are elucidated in Fig1. It can be seen that in as many as 40 to 50 percent of the cases the cause cannot be determined and hence remain a challenge for the clinician. Advanced maternal (>35years) & paternal age (>40 years) and number of previous miscarriages (>40% risk after 3 miscarriages) are two independent risk factors for further miscarriage. Gestational age at time of loss determines both the etiology and risk of recurrence as RPL occurs at similar gestational age and recurrence risk increases as gestational age at time of loss increases.

Aneuploidy

In approximately 2–5% of couples with recurrent miscarriage, one of the partners carries a balanced structural chromosomal anomaly, most commonly a balanced reciprocal or Robertsonian translocation or inversions which can cause pregnancy loss when inherited by embryo in a homozygous or unbalanced state (0.7%).

The likelihood of RPL being related to parental karyotype abnormality detected by peripheral blood karyotyping is higher and merits investigation when:

- Maternal age is > 35 years
- In young couples if:
  1. History of three or more miscarriages,
  2. Consanguineous marriages,
  3. A family history of still births or miscarriages
  4. Abnormal live birth.

The couple should be counseled that they themselves do not have any medical disease and they have every possibility of subsequently having a normal or carrier

child and that as the number of miscarriages increases, the risk of euploid pregnancy also increases.

Products of conception obtained should be sent for traditional karyotype or for r 23 chromosome pair microarray evaluation which will guide further interventon. If found to be aneuploid, no further evaluation is recommended at that juncture, because the cause for the loss is known, although all future early miscarriages should also be subjected to karyotypic evaluation.

If an unbalanced chromosomal translocation or inversion is identified, then the workup focuses on performing parental karyotype. Depending on the type of chromosomal rearrangement interventions such as pre-implantation genetic testing (PGD), chorionic villous biopsy, amniocentesis or use of donor gamete in next pregnancy can be offered, *though there is insufficient data favoring PGD to improve live birth in carrier couples compared to natural conception and follow up.*

Anatomic causes

Anatomic causes require treatment only after other investigations for RPL yield no other treatable factor. Anatomic causes of RPL are diagnosed using various investigations like 3D transvaginal sonography, sonohysterography, MRI, hysterosalpingography (HSG), hysteroscopy and laparoscopy.

Mullerian fusion defects are common and out of these, septate uterus has an abortion risk of 65% due to poor blood supply and impaired implantation. Surgical correction of the septum is recommended. Other anomalies like uterus didelphys, bicornuate or unicornuate uterus are associated with later trimester losses or preterm deliveries. Treatment for associated cervical incompetence is advisable.

Intrauterine adhesions and Asherman's syndrome interfere with implantation due to insufficient endometrium to support fetoplacental growth and are treated with hysteroscopic lysis.

Intrauterine submucosal leiomyomas grade 0 and 1 and those >5 cm, can contribute to pregnancy loss due to poor endometrial receptivity of the decidua overlying the myoma, degeneration leading to cytokine release and distortion of the uterine cavity. Surgical removal is by morcelation and operative resectoscopic hysteroscopy.

In the case of and irreparable defects surrogacy can be considered.

Endocrinological causes

Endocrine factors like uncontrolled diabetes mellitus (hemoglobin A1C levels >10) in the first trimester and untreated thyroid disease have been associated with miscarriage. Polycystic ovary syndrome (PCOS) has been linked to an increased risk of miscarriage (20 to 40%) due to associated insulin resistance, hyperinsulinaemia and hyperandrogenaemia. Role of metformin is controversial. Treating hyperprolactinemia with bromocriptine improves pregnancy outcome.

Autoimmune/thrombotic factors

Antiphospholipid antibody syndrome (APS) found in 15% cases of RPL is an autoimmune condition and is the most important treatable cause of recurrent miscarriage. Antiphospholipid syndrome refers to the association between high levels of antiphospholipid antibodies (lupus anticoagulant, anticardiolipin antibodies-ACL or anti-B2 glycoprotein-I antibodies) which are positive even after a 12 week interval and an adverse pregnancy outcome or vascular thrombosis.

High ACL antibodies have been found to have 3-9 times greater risk of fetal loss. APL antibodies have increased arterial and venous thrombosis and increased secretion of thromboxane.

All women with recurrent first-trimester miscarriages and with one or more second-trimester miscarriage should be screened before pregnancy for APLA. Live birth rate in pregnancies with no pharmacological intervention has been reported to be as low as 10%. However a significant decrease in miscarriage rates by 54% and increase in live birth rate is achieved by starting the patient on asprin (75 mg) and heparin (either fractionated or long acting). Low dose asprin is started pre conceptionally till 34-36 weeks gestation while heparin is started when pregnancy is confirmed and is continued till delivery and further postnatally for 6 weeks to cover risk of VTE.

Women with recurrent second-trimester miscarriage should also be tested for inherited thrombophilia if there is a personal or family history of thromboembolic events or thrombosis at an unusual location or thrombosis at young age. Thrombophilia is associated with an increased risk of both sporadic miscarriage and severe preeclampsia. Women should be tested for factor V Leiden mutation, prothrombin gene mutation (G20210A), deficiency of antithrombin, protein C, or protein S on two separate occasions measured outside of pregnancy, combined oral contraceptive use, or significant liver disease. Patients with inherited thrombophilia require anticoagulant treatment in pregnancy and puerperium to prevent VTE but no clear benefit has been seen to prevent RPL.

The effect of anticoagulants in women with unexplained recurrent miscarriage and inherited thrombophilia needs to be assessed in further randomized controlled trials; at present there is no evidence of a beneficial effect for increasing live births or decreasing obstetric

complications (Cochrane review 2014)[4]. However, in the case of APS and recurrent pregnancy loss, aspirin and heparin are still recommended.

Infection

For an infective agent to be implicated in the aetiology of repeated pregnancy loss, it must be persistent, should avoid detection or must cause insufficient symptoms to disturb the woman. Hence TORCH screening in RPL should be abandoned as most infections cause only sporadic miscarriage.

Diagnosis and treatment

An evaluation of a patient with RPL should always follow a detailed obstetric and medical history, including documentation of the previous pregnancies gestational age at loss, any VTE phenomena in self or family, pathologic tests that were performed on previous occasions, any evidence of chronic or acute infections or medical diseases, addictions, life style, any recent physical or emotional trauma, any family history of pregnancy loss, and any previous gynaecologic surgery or complicating factor and detailed examination including gynaecological.

Progestogens (oral, vaginal injectables)

Progestogens have been used, in the first trimester of pregnancy, to prevent miscarriage. American Society for Reproductive Medicine in 2015 concluded that there is no clear cut reproducible clinical practical method to diagnose luteal phase defect. *There is no evidence to support the routine use of progestogen to prevent miscarriage in early to mid-pregnancy, but there is preliminary evidence of benefit of treating women with a history of recurrent miscarriage with any route with progesterone and no adverse effects were suffered by either mother or baby in the available evidence. (Cohrane Review)*[5] (for details refer to chapter on progestogens in pregnancy)

Life style modifications

Maternal cigarette smoking, alcohol, coffee consumption has been associated with an increased risk of sporadic miscarriage, in a dose-dependent manner. Obesity ($BMI>30KG/M^2$) is linked with gestational diabetes and PCOS associated with sporadic and RM, hence weight loss improves pregnancy outcome in these women.

Immune therapies

Most immune therapies to reduce RPL are experimental. The developing fetus carries paternal inherited gene products and to prevent recognition as a foreign antigen maternal blocking antibodies are developed. Either a weak immune blocking antibody response is developed or unusually strong response develops resulting in miscarriage. *Immuno -stimulating therapy using allo-antigens on paternal or pooled donor leucocytes to stimulate maternal immune system; immune-suppressive therapy by using IVIG infusion & intra-lipid infusion and TNF alpha inhibition is experimental at present. No clear cut benefits of these therapies or prednisolone has been demonstrated.*

Conclusion

The treatment of RPL should be directed at the cause but only 50% cases of RPL have a treatable cause. Abnormal findings during evaluation should be corrected before attempting any subsequent pregnancy. Women with corrected anatomical anomaly have a successful pregnancy in 60 to 90% cases, cytogenetic abnormality prognosis varies from 20 to 80% while treated endocrine factors are >90% successful. *Given the good outcome (70 to 97%) for most couples with unexplained recurrent abortion in the absence of treatment, it is unethical to recommend unproven therapies, especially if they are invasive and expensive. Counselling, appropriate emotional support and life style modification are the most important aspects of therapy required in these cases. In women with a history of RPL, the presence of a normal embryonic heart rate between 6 and 8 gestational weeks that is confirmed with repeat sonography after one week is reassuring and associated with a live birth rate of 82%.*

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AOGD Celebrates World Population Day

AOGD celebrated World Population Day 2015 on 11th July with great enthusiasm. All across Delhi various activities in the form of CMEs, public forums, "Nukkad Natak", health camps, quiz and poster competitions were organized to commemorate the occasion. Presenting below a few glimpses of this week long celebration














Meet the Luminary

Dr Kamal Buckshee

It was indeed a great privilege and honor for us to meet Dr Kamal Buckshee- in just a few moments we were enraptured by her memoirs, her magnetism, her affable persona, her indomitable spirit and her plethora of achievements. Her message for all of us reflects the kindness of her soul and will be cherished by all the AOGDians. These two pages are just not enough to capture the glory of her illustrious life.....

Dr Jyotsna Suri, Dr Rekha Bharti

Birthday 30th March	**Place of birth** Peshawar, Pakistan	**Graduation** AIIMS, Delhi, 1st batch in 1956	**M.D. (Obs&Gynae)** AIIMS
If not a gynaecologist, what would you have been? Lawyer, Physician or Transplant surgeon		**What makes your day?** Managing and operating successfully, challenging and difficult cases	
Your strategy in a crisis Stay calm, quiet, have patience, take help of colleagues		**How do you de-stress?** Listening to music mainly ghazals, watching plays and talking to friends	


Royal Collage FROG Degree


Life Time Achievement Award FOGSI


Living Legend Title from International Society of Gynae Plastic Surgeons


With Husband at Grand Canyon


Happy Moments with Grandson


At 3rd Annual Conference AOGD 1979


Life Time Achievement Award AOGD


Family receiving appreciation by the Prime Minister, Rajiv Gandhi for younger daughter's poem "The Day After"


Special honour at 15th Asian and Oceanic Congress of Obstetrics and Gynecology 1995 at Bali


After Guest Lecture at Lahore

Workshop on Advanced Opperative Endoscopy in Cynaecology

Designed by **Ms Deepshika Dohare**

Any regrets?- Wanted to give more time to my daughters but couldn't do so due to professional commitments Also wanted to be present by my mother's side when she died, but that time I was abroad on some assignment.

One habit that you are proud of- Being honest and frank; innovative temperament- designed needles for in utero blood sampling as patients could not afford the commercially available needles.

What ruins your day and disappoints you- Seeing students or colleagues having loud arguments or fighting; Dishonesty in research and casualness in patient care.

High point of your life- Survival of husband in 1979 after being in cardiac shock for 48 hours; and achievements of my daughters of whom I am really proud.

Your role model- Dr Shirodhkar for his innovations, Dr Amy Engineer's confidence and jovial nature, Dr P K Devi's strong character, Dr Rohit Bhatt as a humble and silent worker.

A book that has made a lasting impression- Clinical Obstetrics by Ian Donald, Bonney's Gynaecological Surgery, T.L.T. Lewis and P.G. Brown.

Your favourite- Pastime- Travelling, gardening and listening to ghazals; **Singer-** Jagjit Singh; **Movie-** Umrao Jaan, Mughal-e-Azam; **Food-** South Indian, especially Sambar and Dosa.

Your professional journey- After MD joined as SR at MAMC for one month while waiting for vacancy at AIIMS, completed SR-ship at AIIMS and joined there as Senior Research Officer and enrolled for PhD on "Scanning Electron Microscopy (SEM) of the Endometrium in patients with IUCD". (Assisted a Russian Scientist in transplant of testes in monkeys in 1970). Selected for WHO fellowship- "Fetomaternal and Reproductive Endocrinology" and Commonwealth fellowship, during lecturership at AIIMS but had to drop Commonwealth fellowship due to marriage in 1972. Awarded WHO fellowship at Stockholm-Sweden that too couldn't be completed as we wanted our baby to be born on Indian soil. Did not return back to complete fellowship as I had no heart to leave my little daughter for 6 months. Joined back as Assistant Professor at AIIMS, after holding various research and academic positions finally held prestigious position of Professor & head of the department and superannuated from AIIMS in 1998. The seeds of various super specialities of today at AIIMS- IVF, Fetal Medicine and Endoscopy were laid during the 80s during my time. Presently, I am a Senior Consultant at Indraprastha Apollo Hospital & Fortis La Femme and Emeritus Professor, National Academy of Medical Sciences.

Honours & Awards- 'Kamal Buckshee's Oration' at National Conference of The Society of Fetal Medicine, started from 2014 for pioneering efforts in fetal medicine in India and as acknowledgement of being one of the finest teachers in this field. Dr BC Roy Award for eminent medical teacher, FOGSI Lifetime Achievement Award and AOGD Lifetime Achievement Award, Indo-Norwegian award- IVF and ART, Fellow of National Academy and Fellow of Royal College of Obstetricians and Gynaecologists.

Professional Achievements- Pioneer in India for-successful, ultrasound guided percutaneous intrauterine fetal blood transfusion; developed and standardised the technique of fetal blood transfusion and fetal skin biopsy and trans abdominal chorion villous sampling at AIIMS, uterine balloon therapy for patients with AUB, ultrasound guided tubal cannulation.

Designed- fetal skin biopsy forceps and needles for PUBS and suggested modification of the Filsche's titanium/silicon rubber clip for female sterilization; **Developed-** innovative treatment modalities for hirsute females, the microsurgical technique for reconstructive surgery of the lower reproductive tract andtechnique for the repair of congenital procidentia, vaginal agenesis and cervical atresia; **Positions Held-** President, FOGSI 1995, Indian Society of Perinatology and Reproductive Biology 1994-96. Visiting Scientist to: Norwegian Radium Hospital, Norway; Memorial Sloane Katering Hospital, USA; Radiumhemet Hospital Stockholm, Sweden; **Examiner-** for DM endocrinology and DM Genetics

My achievements are due to team of my- patients, postgraduates, faculty, staff and my family

What motivated you to take up this profession?- seeing patients dying of TB, heart disease and cirrhosis and their suffering pained me

What inspired you to become a gynaecologist?- Was moved by the death of a patient during internship, she died of PPH soon after delivery, leaving behind a small child. As a house surgeon in Gynae and Obstetrics, was motivated by vast horizon of gynaecology. My sister had ectopic pregnancy.

Any unfulfilled tasks?- Though, every desire has been fulfilled but I wanted to do research in stem cells for treatment of cancer and endometrium regeneration; also wanted to do some work on ovarian and uterine transplantation.

Helpless moment of your early professional life?- Once while doing internship, wife of an OT technician came in labour with breech presentation and good size baby, the resident had gone for some work and patient started bearing down, I was really apprehensive about the head getting stuck but was able to conduct the breech delivery successfully.

Your current state of mind- In best of spirits and enjoying life.

A piece of advice you want to give to budding gynaecologist- have a strong base, learn art of good history taking and systemic examination, have good observation, good record keeping and craving to acquire knowledge

Any other message- For postgraduate students- listen carefully to what patients and seniors say, reason well, nurture your interest/talents and aspire to achieve. Be up to date with recent advances, present your work at meetings and conferences, and accept criticism; **For senior residents-** Conduct patient centred, problem oriented research to develop new techniques, instruments and therapeutic regimes. Respect patients, their issues and confidentiality. Be honest and ethical in patient care and research and do what you enjoy; **For Young Faculty-** Audit incidents of previous 24 hours with zero blame game and perform mock drill with your team to plan management of in house obstetrics and gynae emergencies. Entrust your juniors with responsibility to build their confidence, skills and personality. Don't raise voice in OT/ward/meeting to solve problems or controversial issues, put your point across in a clear and firm manner, without offending anyone. Remember patient's wellbeing and safety is above our egos and conviction.

What does AOGD mean to you- A- Academics, O- Obstetrics, G- Gynaecology, D- Dearest Obs and Gynae colleagues and friends.

Events Held

Events held under the aegis of AOGD in July 2015

- **AOGD Endoscopy and Endometriosis Subcommittees hands on course in Hysteroscopy, Laparoscopy and Vaginal Surgery** on 9th, 10th and 11th July 2015 at Fortis Flt Lt Rajan Dhall Hospital, Vasant Kunj.
- CME on **"Approach to Female with Urinary Incontinence"** organized by AOGD Urogynaecology Sub-Committee at Indraprastha Apollo Hospital on 12th July, 2015.
- **"Women's Comprehensive Health Camp"** organized by VMMC & Safdarjung Hospital, coordinated by Dr. Rupali Dewan under outreach activities, on 8th July, 2015.
- CME on **"Obesity in Adolescent Girls and Bariatric Surgery in the Young"** under the aegis of Delhi Gynae Forum, Adolescent Health Committee, Reproductive Endocrinology Committee and North Delhi ObGyn Society at Fortis Hospital on 17th July 2015.
- CME on "**Opening Minds to the Care of the Fetus**" organised by R & R in association with Society of Fetal Medicine under aegis of AOGD at R & R Hospital on 19th July 2015.
- AOGD outreach activity "**Women's Comprehensive Health Camp**" organized by Sabharwal's Clinic in South Delhi on 22nd July, 2015 in collaboration with Rajiv Gandhi Cancer Hospital.
- CME on "**Fertility-Crossing the Hurdles**" on 26th July, 2015 at Gurgaon organized by W. Pratiksha Hospital under aegis of AOGD.
- **"Monthly Clinical Meeting"** at Holy Family Hospital on 31st July, 2015.
- **"Guest Lecture"** by Prof. Bart Fauser on PCOS at Hotel Le Meridien on 2nd August, 2015.
- Outreach activity in collaboration with RGCI at **"Family Health Mela"** organized by IDHS, West District on 23rd July, 2015.

Hands on course in Endoscopy

CME on Approach to Female with Urinary Incontinence

Prof Bart Fauser gave a talk on PCOS at Hotel Le Meridien

AOGD representation at FOGSI International Conference at Hyderabad

AOGD outreach activity

CME on Adolescent Obesity in Fortis, Shalimar Bagh

CME on Fertility Crossing Hurdles in South City Gurgaon

Monthly clinical meeting at Holy Family Hospital

37th Annual Conference of Association of Obstetricians and Gynaecologists of Delhi

Dates: **31st October, 2015 & 1st November, 2015** • *Venue:* **India Habitat Center, Lodhi Road, New Delhi**

Scientific Programme

Time	Hall A (Obstetrics)	Hall B (Gynecology)
	Day 1	
09.00-10.00	**Newer Horizons**	**Newer Horizons**
	Pre eclampsia; New Insight	Role of AMH in infertility
	New Concepts in Labour Management	Endometrium in infertility management
	Multiple Pregnancy	Ovarian Stimulation in extreme cases- Low reserve and PCOS
10.00-11.00	**Obstetric Emergencies: Call for action**	**Gynae surgery: Unexpected challenges**
	Postpartum Collapse	Vascular Injuries
	Altered Sensorium in Pregnancy	Urinary tract/intestinal injuries
	ARDS in Pregnancy	Sepsis following surgery
11.00-11.30	**New Insights**	**New Insights**
	Cord Blood Stem Cell Storage	Current standards in management of ovarian malignancy
	Fetal Medicine Current Scenario	Current trends in management of carcinoma endometrium
11.30-12.00	**Inauguration**	
12.00-12.30	**Invited Lecture**	
12.30-13.00	**AOGD President Oration**	
13.00-14.00	**Lunch**	
14.00-15.00	**Legal Tangles**	**Mixed Bag**
	Birth injuries and the Law	Hyperprolactenemia & obesity
	Terminating pregnancy in 2nd trimester	New biormarkers in Malignancy
	Pannel/case discussion on legal issues in obs & gynae	Update on HPV Vaccine
15.00-16.00	**Guideline capsules:**	**Guideline capsules:**
	Decoding APLA	Luteal phase support
	Targeted Ultrasound in Obstetrics	Intrauterine Insemination
	Rationalizing Blood component therapy	Menopause risk reduction strategies
16.00-17.00	**The Quest continues**	**The Quest continues**
	Hydrocephalus: Should it be drained ?	Medical management of fibroids
	MSL: Is it a true indicator of fetal distress ?	Role of sentinle node in gynae malignancies
	Screening for Aneuploidy: the best time	Frozen Section..is it a waste of time
	Vitamin D supplementation: the right dose	

Time	Hall A (Obstetrics)	Hall B (Gynecology)
	Day 2	
09.00-10.00	**Competition Papers**	**Endoscopic Videos**
		Single incision lap Hysterecomy
		The future of robotics in gynae endoscopy
		Fertility Enhancing surgeries
10.00-11.00	**Brain storming case discussions**	**Brain storming case discussions**
	Heart Disesase in pregnancy	Endometriosis in young women
	Renal Disorders in pregnancy	Recuurent & deep infiltrating endometriosis
	Connective tissue disease in pregnancy	Treatment of Adenomyosis
11.00-12.00	**Recent Advances in Obstetrics: Breaking news**	**Recent Advances in Gynecology Breaking news**
	New therapies for RPL	Pessary for pelvic organ prolapse
	Oral Hypoglycemic Agents in Pregnancy	Botox for urinary incontinence
	Magsulf for neonatal neuroprotection in Preterm labour	Conservative mangement of SUI & Biofeedback
12.00-12.30	**FOGSI President Oration**	
12.30-13.00	**Brig Khanna Oration**	
13.00-14.00	**Lunch**	
14.00-15.00	**Panel Discussion**	**Panel Discussion**
	Infections in pregnancy	Contraception
	Preconceptopn councelling	Fertility presevation
15.00-16.00	**Debates**	**Debates**
	Prolonged pregnancy: Should we wait ?	Empirical ATT for Infertility in India- Is it indicative ?
	Elective cesarean section: Should it be done at 39th week ?	Morcellation in laproscopic myomectomy- Boon or bane ?
	Isolated oligoamnios in 3rd Trimester: Is action required ?	3D & 4D Ultrasound- Is it breakthrough or gimmick ?
	NIPT- best option for prenatal testing ?	DHEA in women with poor ovarian reserve- Is it a must ?
16.00-17.00	**Slogan Competition**	
	Valedictory Session	

Call for Abstracts

Theme Topics

1. Critical care in Obstetrics & Gynecology
2. Preventive Health Care in Obstetrics & Gynaecology
3. Miscellaneous

Please email abstracts submission form to AOGD office at aogdsjh2015@gmail.com & sumitrabachani@gmail.com

Last date for accepting free paper and poster abstract is 30th September, 2015 and for competition papers is 15th September 2015- candidates applying for competition papers should be less than 30 yrs of age.

Note: Abstracts will not be considered without Conference Registration Payment.

List of Prizes - AOGD Conference 2015

Dr S N Mukherjee- Roating Trophy	Best Clinical Presentation
Research paper- Best Competition Paper	3 Medals, Gold, Silver, Bronze
Dr Batra's Medal- Winning team of AOGD	1 Gold Medal
Dr Neera Agarwal Medal- Best Paper on theme topic obstetrics	2 Medals, Gold, Silver
Dr Neelam Bala Vaid's Medal- Best paper on theme topic gynecology	2 Medals, Gold, Silver
Free Paper competition- Mescellaneous Category	2 Medals, Gold, Silver
Slogan Competition	First Prize, Second Prize
Dr Suneeta Mittal- Population Stabilization	1 Gold Medal
Dr U P Jha & Dewan Balakram- Best Presentation in Gynae Oncology	1 Gold Medal
Dr U P Jha & Raj Soni- Best Oral/Video/Paper Presentation in Endoscopy	1 Gold Medal

37th Annual Conference of Association of Obstetricians and Gynaecologists of Delhi

Theme:
"Promote Health, Protect Rights & Provide Quality Services"

Conference: 31st Oct., 2015 - 1st Nov., 2015 **Venue:** India Habitat Center, Lodhi Road, New Delhi

Registration Detail

(From may be photocopied. Kindly fill in Capital Letters)

Full Name: ..... Qualification: .....

Specialty ..... Category: ☐ Delegate ☐ PG Student ☐ Faculty

Organization: ..... Designation .....

Address: .....

Pin Code:..... Mobile No.: ..... Email ID:.....

Registration Fee

Dates	Conference			Workshop		
	Members	PG Students	Non-members	Members	PG Students	Non-members
Up to 30 September, 2015	₹ 3500	₹ 3000	₹ 4300	₹ 1500	₹ 1300	₹ 1700
Up to 15 October, 2015	₹ 4000	₹ 3500	₹ 4800	₹ 1800	₹ 1600	₹ 2000
Spot	₹ 4500	₹ 4000	₹ 5300	₹ 2100	₹ 1900	₹ 2300

- All cheques/bank draft payable at New Delhi & should be made in favour of "AOGD Annual Conference 2015"
- Post Graduates have to attach a certificate from HOD and also be an associate member of the AOGD in order to attend and present a paper.
- It is mandatory to register for the conference in order to attend & register for any workshop.
- You may register for more than one workshop.

Date	**Workshop**	**Venue**	☑
28th Oct., 2015	Oncology	SGRH	☐
28th Oct., 2015	Reproductive Endocrinology and Infertility	Wood Apple Residency Vikas Marg	☐
29th Oct., 2015	Fetal Medicine	Apollo Hospital	☐
29th Oct., 2015	Endoscopy	Fortis Vasant Kunj	☐
30th Oct., 2015	Endometriosis	Fortis Vasant Kunj	☐
2nd Nov., 2015	Urogynaecology and vaginal surgery	VMMC & SJH	☐
2nd Nov., 2015	Medico legal aspect "Mother & Child"	ESI, Basai Darapur	☐

Payment details:

Bank draft/cheque no..... Bank .....

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CONFERENCE SECRETARIAT

Ward-8, Room No.-118 Department of Obst & Gynae, VMMC & Safdarjung Hospital, New Delhi-110 029
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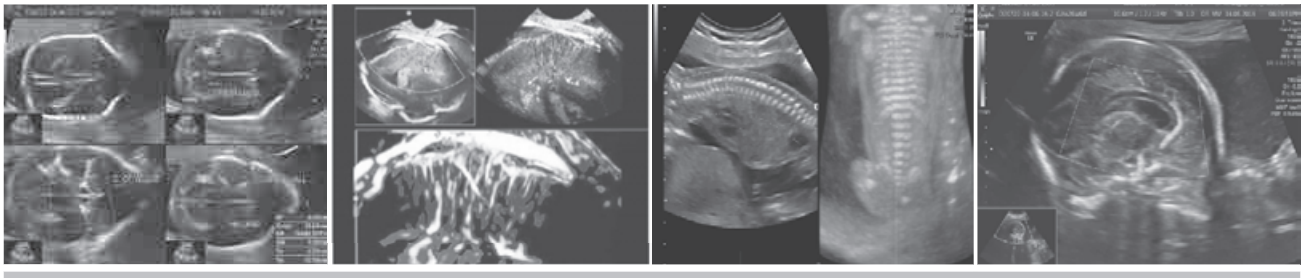

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FENIX - 2015

28th - 30th August, 2015, J L N Auditorium AIIMS, New Delhi

Annual Conference of Delhi Gynaecological Endoscopists Society

Women- Fertility and Beyond: Inception to Xcellence

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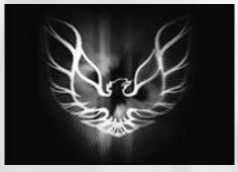

Precongress Workshop
28th August, 2015
Annual Conference
29th - 30th August, 2015

CALL for Abstracts before 31st July, 2015

MCI Credit Points Applied

Non Residential Package

Registration fee	Conference + Workshop		
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Role of Progestogens in Early Pregnancy

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Introduction

Progesterone was one of the first female sex hormone to be discovered. Its role in successful implantation of embryo led to progesterone being named "the hormone of pregnancy". It plays a crucial role in each step of human reproduction, being involved in ovulation, implantation, and pregnancy. If fertilization occurs, the progesterone secreted by the corpus luteum is important for maintaining early pregnancy till the placenta takes over its function at 7-9th week of gestation. Further, it also modulates the immune response of the mother to prevent rejection of the embryo and enhances uterine quiescence.

Insufficient progesterone secretion and delayed endometrial development at the time of implantation or during early pregnancy has been implicated as a cause of sporadic and recurrent miscarriages. Since progestogens play an important role in successful continuation of pregnancy, progestogen supplements have often been used in pregnancy. Role of progestogens in early pregnancy has been reviewed in normal and complicated pregnancy and has been discussed in this article.

Progestogens in uncomplicated early pregnancy

For an unselected population of women in the first trimester of pregnancy with no complications, there is no evidence of benefit of progestin for prevention of miscarriage. This conclusion is based on 15 RCTs including 2,118 women[1]. Progestogens should not be routinely given in uncomplicated pregnancy.

Progestogens in threatened miscarriage

Miscarriage is a common complication of pregnancy occurring in 15%to 20% of all clinically recognized pregnancies. It is associated with chromosomal abnormality of the conceptus in over 50% of cases. Other risk factors for miscarriage include maternal age over 34, paternal age over 40 years, maternal obesity, maternal infection such as genital herpes simplex, HIV-1 and group B streptococci vaginal infections. Maternal endocrine abnormalities such as uncontrolled diabetes mellitus, insufficient production of progesterone by the corpus luteum, polycystic ovary syndrome, and maternal autoimmune factors such as phospholipids antibodies are other suggested factors associated with miscarriage. In many cases, the cause of miscarriage cannot be identified.

Threatened miscarriage is the condition when there is vaginal bleeding, with or without abdominal pain, while the cervix remains closed in a pregnancy less than 20 weeks. Once the cervix begins to open, pregnancy loss is inevitable. Since progestogens are essential in both, establishing and maintaining pregnancy, it is therefore a possible treatment for threatened miscarriage.

Wahabi et al reviewed four trials (421 women) which compared progestogens to either placebo or no treatment in threatened miscarriage. Meta-analysis of the effect of progestogen compared to placebo or no treatment showed reduction of miscarriage rate with the use of progestogen (risk ratio 0.53)[2]. Two trials reported that treatment with progestogens did not increase the occurrence of congenital abnormalities in the newborns and the women did not have any significant difference in incidence of pregnancy-induced hypertension or antepartum haemorrhage.

Progestogens in recurrent miscarriage

Recurrent miscarriage has been defined as 3 or more consecutive episodes of spontaneous pregnancy losses with the same biological father (WHO, 1992). 1% to 2% of couples suffer from recurrent early pregnancy loss. Extensive investigation of women involved often fail to find a recognizable cause in up to half of the cases.The inadequate secretion of progesterone in early pregnancy has been proposed as a cause of recurrent miscarriages. The action of progesterone in the regulation of inflammatory mediators in pregnancy is the proposed pathway to reduce the risk of miscarriage. Progesterone deficiency leads to increased levels of pro-inflammatory interleukin 8 (IL-8), cyclo-oxygenase-2, and monocyte chemo attractant protein-1 which destabilize the endometrium. Successful pregnancy is associated with the down-regulation of pro-inflammatory T helper cell type 1 cytokines and upregulation of anti-inflammatory T helper cell type 2 cytokines. A 34-kDa protein, progesterone-induced blocking factor prevents inflammatory reactions by blocking Th-1 cytokines and natural killer cells degranulation while increasing asymmetric nontoxic blocking antibodies.

Review of Cochrane Data 2008 in which fourteen trials (2158 women) were included showed no statistically significant difference in the risk of miscarriage between progestogen and placebo or no treatment groups and no statistically significant difference in the incidence of adverse effect in either mother or baby. In a subgroup analysis of four trials involving women who had recurrent miscarriages (three or more consecutive miscarriages; four trials, 225 women), progestogen treatment showed a statistically significant decrease in miscarriage rate compared to placebo or no treatment (Peto OR 0.39). However, these four trials were of poorer methodological quality. No significant differences in the rates of preterm birth, neonatal death, or fetal genital anomalies/virilization were found between progestogen therapy versus placebo/control.

Progestogens for luteal support in assisted reproductive technologies (ART)

Luteal phase support (LPS) has routinely been applied as part of ART treatment. The use of agonistic or antagonistic gonadotropin-releasing hormone (GnRH) protocols in stimulated IVF/intracytoplasmic sperm injection (ICSI) cycles cause disruptions to the luteal phase, leading to inadequate development of the endometrium and asynchrony between endometrial receptiveness and embryo transfer. The most plausible cause of this condition is the development of multiple follicles upon ovarian stimulation, which results in super physiological steroid concentrations and consequent inhibition of luteinizing hormone (LH) secretion by the pituitary via negative feedback at the level of the hypothalamic-pituitary axis.

Van der Linden analysed sixty-nine studies with a total of 16,327 women included in them. They observed that exogenous progestogens had significantly better clinical pregnancy and live birth rates than placebo or no treatment.[(Peto OR 1.83) & (Peto OR 2.95)][3]. When hCG was compared to placebo or no treatment, ongoing pregnancy rate was better with hCG. However there was a significantly higher risk of ovarian hyperstimulation syndrome when hCG was used (Peto OR 3.62). Subgroup analysis of progesterone versus progesterone + hCG showed a significant benefit from progesterone (Peto OR 0.45). For the outcome clinical pregnancy, subgroup analysis of micronized progesterone versus synthetic progesterone- showed a benefit from synthetic progesterone, with a significantly lower rate in the micronized progesterone group (Peto OR 0.79).

Routes of progestogen administration

Progestogens can be administered by three routes: orally, vaginally or intramuscularly.

Oral Micronized Progestogens- Micronizing is a process designed to increase the half-life of progesterone and reduce its destruction in the gastrointestinal tract. Micronization decreases particle size and enhances the dissolution of progesterone. Absorption of micronized progesterone is enhanced twofold when the hormone is taken with food. Unlike synthetic progestins, micronized progesterone has not been shown to affect mood, decrease high-density lipoprotein (HDL) cholesterol levels or adversely affect pregnancy outcome.The most commonly reported side effects are fatigue and sedation.

Vaginal Progestogens- Vaginally administered progestogens yields lower serum levels, but nonetheless results in higher concentrations in the uterus and achieves endometrial tissue concentrations up to 30-fold greater than those achieved with IM route. Progestogens can be administered vaginally as an 8% gel, compounded suppositories, or in tablets containing micronized progesterone in doses ranging between 200 and 600 mg/day.

Intramuscular Progestogens- Intramuscular injections of progesterone is the route which results in optimal blood levels and generates circulating progesterone concentrations at or above the physiological range (Intramuscular progesterone in oil -50 mg/day)

Oral progestogen supplementation in randomized controlled trials was observed to result in significantly lower clinical pregnancy rates compared with women receiving IM administered progesterone.[3]

The relative effectiveness of the vaginal and IM routes of progesterone supplementation has been controversial. A clinical trial involving 250 women in a first IVF cycle, randomized to receive IM progesterone (50 mg/day) or vaginal micronized progesterone supplementation (200 mg/day), observed higher pregnancy rates in the group treated with IM progesterone[4]. A second open label randomized trial involving 201 women also yielded similar results[5]. In contrast, another study of IVF outcomes in a group of 262 women supplemented with E_2valerate in combination with either IM progesterone (50 mg/day) or vaginal micronized progesterone (600 mg/day) observed no differences in clinical pregnancy rates between the groups[3]. In addition, first trimester miscarriage rates were significantly lower in women receiving vaginal supplementation, although their plasma concentrations also were lower than in those treated with IM progesterone. The Cochrane systematic review of clinical trials concluded that clinical pregnancy rates per embryo transfer in women receiving vaginal or IM progesterone supplementation were not significantly different (OR 0.82, CI 0.67–1.01)[1].

Effect of progestogens on fetus

Several reports hypothesized an association between intrauterine exposure to progestogens in the first trimester of pregnancy and genital abnormalities in male and female fetuses. This was due to the possible up-regulation of androgen receptor operated by pharmacological doses of these steroids.

Cochrane Data Base Review was done for safety of first trimester sex hormone exposure in fetus. It included 14 studies consisting of 65,567 women[6]. No harm, particularly any external genital malformation, was found in this review. However, another case-control study has suggested an association between hypospadias and progestogen use[7]. However the findings of a single case-control study offer weaker evidence than the results of multiple large cohort studies which do not substantiate any such association.

Also concerns have been raised that the use of progestogens, with their uterine-relaxant properties, in women with fertilized defective ova may cause a delay in spontaneous abortion.

Effects of progestogens on maternal health

Meta-analyses of progestogen use in recurrent miscarriage, threatened miscarriage, and in the prevention of preterm birth have not shown any evidence of short-term safety concerns in the mothers. The side effects of progesterone injection are mainly related to local irritation caused by injection. Suppositories are messy and sometimes give vaginal irritation, itching, burning, or yeast infection. The oral progesterone is well tolerated with side-effects in some women of dizziness or sleepiness. This can be minimized by taking the highest dose of progesterone at night. Care must nevertheless be exercised when taking oral progesterone, especially for the first three days, to avoid complications related to drowsiness.

Future trials

PROMISE Trial (Progesterone in Recurrent Miscarriage)

The PROMISE trial is a randomised, double-blind, placebo-controlled major research study that aims to find out whether progesterone supplements in the first 12 weeks of pregnancy reduce miscarriage risk in women with previous unexplained recurrent loss. The research is now (April 2015) complete and the report is being reviewed for publication in a major medical journal.

PRISM Trial (Progesterone in Spontaneous Miscarriage)

The PRISM trial is a large, double blind, placebo-controlled trial to test the effectiveness of progesterone to prevent miscarriage in women with early pregnancy bleeding. Here it is hypothesized that in women presenting with vaginal bleeding in the first trimester, progesterone (400 mg vaginal capsules, twice daily), started as soon as possible after a scan has demonstrated a visible intrauterine gestation sac and continued to 16 completed weeks of gestation, compared with placebo, increases maternities with live births beyond 34 completed weeks by at least 5%.

These studies may provide clearer and more robust evidence for the role of progesterone in miscarriage management in the near future.

Summary

- In an unselected population of women in the first trimester of pregnancy, there is no evidence of benefit of progestogens for prevention of miscarriage**.**
- For women presenting with a clinical diagnosis of threatened miscarriage, there is now preliminary evidence of a reduction in the rate of spontaneous miscarriage with the use of progestogens.
- For luteal support in assisted reproductive technologies (ART), exogenous progestogen is associated with a significantly higher pregnancy rate than placebo or no treatment with better results obtained with synthetic progestogens than micronized progesterone.

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Cerclage in Cervical Insufficiency: What does Evidence Say?

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Cervical insufficiency may be present in up to 1% of obstetric populations[1] It is usually characterized by dilatation and shortening of the cervix before the 37th week of gestation in the absence of preterm labour, and is most classically associated with painless, progressive dilatation of the cervix in the second or early third trimester resulting in membrane prolapse, premature rupture of the membranes, midtrimester pregnancy loss, or preterm birth.Whenever we encounter these patients a detailed history, examination and investigation is undertaken to decide whether cerclage will be helpful.

How do we diagnose a case of cervical insufficiency?

History: History of repeated mid trimester pregnancy losses; previous preterm pre-labour rupture of membranes at less than 32 weeks; prior pregnancy with a cervical length measurement of less than 25 mm prior to 27 weeks of gestation; and history of prior cervical trauma (e.g. repeated therapeutic abortion, repetitive cervical dilatation, cone biopsy, cervical tears or lacerations, trachelectomy) should also be noted.

Diagnosis: There is no diagnostic test for cervical insufficiency. Although many tests have been reported or are used (assessment of the cervical canal width by hysterosalpingogram, assessment of the ease of insertion of cervical dilators [size 9 Hegar] without resistance, the force required to withdraw an inflated Foley catheter through the internal os, the force required to stretch the cervix using an intracervical balloon- however none of these meet the criteria required for a diagnostic test.[2] In recent practice, transvaginal ultrasonography has been increasingly used as a demonstrably valid and reproducible method of cervical assessment, and cervical shortening correlates with the risk of preterm delivery.[3]

When should a cerclage be offered and to whom?

A recent Cochrane review analyzed data from 12 studies of women considered at sufficient risk to justify cerclage who were randomized to cerclage, alternative treatments (e.g., progesterone), or no treatment. This analysis presents somewhat conflicting findings in reporting that although cerclage has a statistically significant effect on reducing preterm birth rates, there is no significant impact on perinatal morbidity and mortality. Furthermore cerclage was associated with increased maternal morbidity and Caesarean section rates (the latter perhaps also accounting for a non-significant increase in respiratory morbidity amongst infants born to women with a cerclage).[4]

History-indicated cerclage should be offered to women with three or more previous preterm births and/or second-trimester losses. This is done at 12-14 weeks of gestation (Evidence level B RCOG guidelines).While SOGC and RCOG recommend insertion of a history-indicated/ prophylactic cerclage for women with a history of **three or more** previous second trimester pregnancy losses or preterm births, ACOG states that it can be considered in a patient with a history of **one or more** second-trimester pregnancy losses related to painless cervical dilation in the absence of labor or abruptio placentae.[1,5,6]

The insertion of an ultrasound-indicated cerclage is not recommended in women without a history of spontaneous preterm delivery or second-trimester loss who have an incidentally identified short cervixof 25 mm or less. (Evidence level B RCOG guidelines). Women with a history of one or more spontaneous mid-trimester losses or preterm births who are undergoing transvaginal sonographic surveillance of cervical length should be offered an ultrasound indicated cerclage if the cervix is 25 mm or less and before 24 weeks of gestation. (Evidence level A). An ultrasound-indicated cerclage is not recommended for funnelling of the cervix (dilatation of the internal os on ultrasound) in the absence of cervical shortening to 25 mm or less. (Evidence level C)

The insertion of a history or ultrasound- indicated cerclage in women with multiple pregnancies is not recommended, as there is some evidence to suggest it may be detrimental and associated with an increase in preterm delivery and pregnancy loss (Evidence level B). There is only one RCT of history-indicated cerclage in twin pregnancies. This study examined the effect of cerclage (n = 25) versus no cerclage (n = 23) in twins conceived following ovulation induction and demonstrated that cerclage was not effective in prolonging gestation or improving fetal outcome.[7]

History or ultrasound-indicated cerclage cannot be recommended in other high-risk groups such as women with müllerian anomalies, previous cervical surgery

(cone biopsy, large loop excision of the transformation zone or destructive procedures such as laser ablation or diathermy) or multiple dilatation and evacuation

Emergency Cerclage

An emergency (or salvage or rescue) cerclage is typically placed in a woman whose cervix is already dilated. Emergency should be considered when there is clinical or sonographic identification of a cervix dilated > 1 to 2 cm with no perceived uterine contractions (with or without membranes bulging through the external os).[8] Emergency cerclage may be considered in women in whom the cervix has dilated to < 4 cm without contractions before 24 weeks of gestation. (II-3C)

Contraindications to cerclage insertion

- active preterm labour
- clinical evidence of chorioamnionitis
- continuing vaginal bleeding
- PPROM
- evidence of fetal compromise
- lethal fetal defect
- fetal death

Preoperative evaluation

Besides the routine investigations for antenatal and pre-anaesthetic evaluation, it is a good practice to offer a first-trimester ultrasound scan and screening for aneuploidy before the insertion of a history-indicated suture to ensure both viability and the absence of lethal/major fetal abnormality.

Before admission for cerclage, urinalysis for culture and sensitivity and vaginal cultures for bacterial vaginosis should be taken and any infections found should be treated.

Operative issues

- There is no evidence to support the use of routine peri-operative tocolysis in women undergoing cerclage.
- The decision for antibiotic prophylaxis at the time of cerclage placement should be at the discretion of the operating team
- There are no studies comparing general with regional anaesthesia for insertion of cervical cerclage and hence the decision should be made on a case-by-case basis.

Transvaginal approach

The two main techniques of transvaginal cerclage involve the McDonald approach and the Shirodkar approach. In the McDonald approach the suture is inserted as close as possible to the junction of the cervix with the vagina, with no dissection of tissue planes. In the Shirodkar approach a sub epithelial suture is inserted above the junction of the cervix with the vagina with dissection of the bladder and rectum; this allows for higher placement (closer to the internal cervical os) of the suture than the McDonald approach. There are no data to indicate an advantage of one technique over another, so the choice should be left to the discretion and skills of the surgeon.[9]

The choice of suture material should be at the discretion of the surgeon. The most frequently used is a braided Mersilene tape, although some surgeons use Prolene. Meshes are also reportedly used, but no comparisons have been made with existing techniques.[10]

There is no current evidence to support the placement of two purse-string sutures over a single suture. A transvaginal cervical cerclage should be removed before labour, usually between 36+1 and 37+0 weeks of gestation, unless delivery is by elective caesarean section, in which case suture removal could be delayed until this time. In women presenting in established preterm labour, the cerclage should be removed to minimize potential trauma to the cervix.

Transabdominal approach

In women with a previous failed transvaginal cerclage, insertion of a transabdominal cerclage may be considered, but this procedure may be associated with increased maternal morbidity. Transabdominal cerclage can be performed pre-conceptually or in early pregnancy. Guidelines for patient selection include the following:

- Previous failed vaginal cerclage with scarring or lacerations rendering vaginal cerclage technically very difficult or impossible
- Absent or very hypoplastic cervix with history of pregnancy loss fitting classical description of cervical insufficiency

Advantages of abdominal cerclage are: It can be performed in patients who cannot be treated successfully with vaginal cerclage; the cerclage can be placed higher on the cervix, at the level of the internal os.

Disadvantages of abdominal cerclage are: The patient must undergo two laparotomies, one for the cerclage placement and another for the cesarean delivery; the pregnancy that results in fetal death or preterm labor prior to viability after abdominal cerclage will need a hysterotomy even though no living child will result.

All women with a transabdominal cerclage require delivery by caesarean section, and the abdominal suture may be left in place following delivery.

There are no studies directly comparing the insertion of *a preconceptual transabdominal cerclage* with insertion in early pregnancy. However, preconceptual

insertion should be considered when possible, because of the technical advantage of operating on the uterus of a woman who is not pregnant. Abdominal cerclage can be safely left in place if a further pregnancy is a possibility.

There is no evidence to support a laparoscopic approach over laparotomy in the insertion of an abdominal cerclage. However one small study making a retrospective comparison in 19 women demonstrated a viable infant in 9 of 12 women who received a laparoscopic procedure compared with five of seven who underwent an abdominal procedure.[11] The procedure of preconceptional laproscopic cerclage is described briefly later in the article.

Adjuvant management

Bed rest: Bed rest in women who have undergone cerclage should not be routinely recommended, but the decision should be individualized.

Role of indomethacin: Administration of a course of indomethacin prior to cerclage placement might reduce protruding membranes through its effect on reducing fetal urine production (thereby reducing intrauterine pressure) and through its tocolytic value.

Foley balloon inserted into the cervix and then inflated: may further help to reduce bulging membranes and facilitate suture placement.

Complications

Complications reported with cerclage include sepsis, premature rupture of membranes, premature labour, cervical dystocia, cervical laceration at delivery (11% to 14%), and hemorrhage .

Preconceptional laparoscopic cerclage

Procedure: The placement of cerclage via the laparoscopic approach is performed under general endotracheal anesthesia. The patient is placed in the modified dorsal lithotomy position, prepped and draped. 8 mm dilator is placed into the cervix for uterine manipulation and calibration of the os followed by placement of a Foley catheter in the bladder. We prefer a 10-mm umbilical trocar with 5-mm accessory trocars in the bilateral lower quadrants.

The uterovesical fold of peritoneum is opened using the Harmonic ACE and dissected off the lower uterine segment, exposing the uterine vessels anteriorly on both sides (Fig1). Ethibond No 1 suture is introduced into the abdominal cavity. The stitch is placed by passing needle medial to the uterine vessels at the level of the internal cervical os bilaterally (Fig 2,3,4,5). The vesicouterine peritoneum is then reapproximated over the laparoscopic cerclage (Fig 6). The patient is kept in the hospital for 24hours till she is on oral pain medication, voids spontaneously, and has adequate pain control. The patient may then be discharged home.

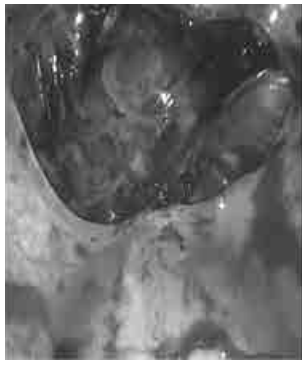

Fig 1: UV fold of peritoneum incised

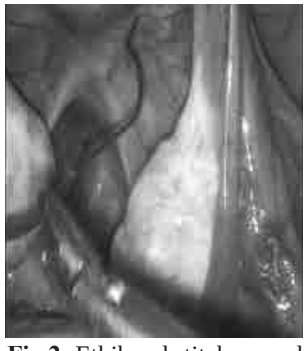

Fig 2: Ethibond stitch passed medial to the uterine vessel on right side

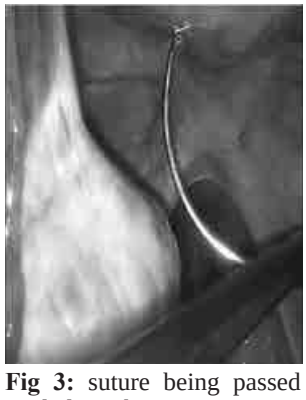

Fig 3: suture being passed medial to the uterine artery on the left side

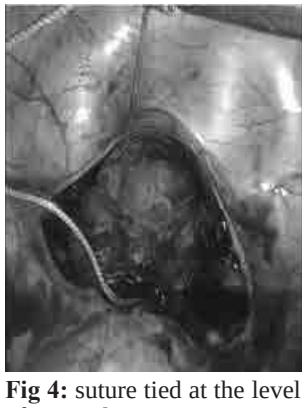

Fig 4: suture tied at the level of internal os

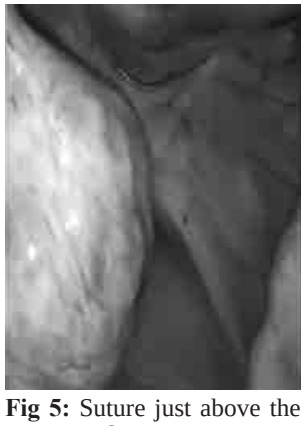

Fig 5: Suture just above the uterosacrals

Fig 6: peritoneum stitched over it

Tips and tricks

- Use a good uterine manipulator
- Open the broad ligament 2cm medial to the isthmus and skelotonize the vessels
- Use low lateral ports to isolate and retract the uterine pedicles
- Pass the curved needle from anterior to posterior

- Tie the knot posteriorly. This allows the knot to be removed by colpotomy incision in case of fetal demise

Medicolegal and ethical issues

The evidence on the safety and efficacy of laparoscopic cerclage for prevention of recurrent pregnancy loss due to cervical incompetence is limited, and therefore this procedure should not be used without special arrangements for consent and for audit or research.

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Cry for Freedom

A tiny dot on the screen
Peered at through the the scan machine
A needle jabbed into my body
I cry out loudly
Oh mother I am alive
Can you not hear my cry
Why am I subjected to many tests
Wanting the perfect baby is that your quest
But do not forget
U too are not perfect.
I yearn for the perfect mom
To hold me close to her bosom
This Independence day
Make a pledge
Not to let
Any such life withers away.

-Dr Sumitra Bachani

GOVERNMENT GUIDANCE

Checklist for Ultrasound Machine /Clinic under PC-PNDT Act

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Do you have an Ultrasound machine? Check list to avoid penalty

- Is your clinic registered under PC-PNDT Act?(date of registration/register within 7 days of purchase)
- Make sure that renewal of the registration certificate is submitted at least 30 days prior to expiry date.
- Do you have registration certificate (registration certificate no. and date of renewal) and is it displayed at a prominent place?
- Display board stating "detection of the sex of the foetus is not done here and it is a legal offence", in bold letters, in two languages- local and English on 3x2.5 feet, dark blue board with matter in white script at a prominent place. (With name, address and phone no. of the centre and phone number of district authority).
- Category under which the clinic is registered (genetic counselling centre; genetic laboratory; ultrasonography centre; or combination– specify).
- How many ultra sound machines are there at the centre?
- What is the brand (make) of the machine?
- Are there any unused machines? And there current status.
- Have you purchased any new /additional machine after registration?
- If yes, has the appropriate Authority been informed about this?
- If yes, is there entry of new machine in the registration certificate?
- Is a copy of PC-PNDT Act available at the centre?
- Is the centre submitting monthly report along with photocopy of completely filled Form F and referral slip to District Authority on 5th of every month?
- Are you filling up referral slips for self referral cases?
- Does the clinic maintain separate ANC register for the clients coming for USG?
- Does it contain name of the client, age, complete address, number of issues with their age and sex. Name of the referring doctor and reason for USG, duration of pregnancy?
- Does record of ANC register and F form tally with each other?
- Is the declaration of Form F, of not seeking sex/gender of the foetus properly signed by pregnant women.
- Make sure you are not giving CD/ soft copies of the USG to the pregnant women.
- Who are operating registered machine/s? (name/s & qualification)
- Do the doctors operating machine fulfil qualifications as per PC-PNDT Act?
- Have you submitted details of all the centres visited at the time of registration?
- Whether same machine and name of operating doctors reflected in the registration certificate?
- Machines not registered as portable should not be moved out of the registered centres.

Do you have a portable USG machine?

- If yes, is the vehicle/s in which portable machine/s is/ are carried registered?
- Does the clinic have a separate registration certificate for portable machine?
- How is the portable machine used? (in the vehicle, in the hospital, at patient's house, at another clinic/ hospital, any other- please specify)

Reference

1. PC-PNDT Act,2015, www.delhi.gov.in/wps/wcm/connect/doit_health/.../PC+PNDT+Act

"Making the decision to have a baby is momentous. It is to decide forever to have your heart go walking around outside your body." - Elizabeth Stone

If you can barely afford the pregnancy test then you definitely can't afford being positive. - Unknown

ORIGINAL RESEARCH ARTICLE

Profile of Women Admitted with Abortion Related Complications in a Tertiary Care Centre

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Abstract

Objective: To study demographic and clinical profile of women admitted with first trimester spontaneous and induced abortions. **Material & Methods**: Women admitted at tertiary care hospital, with first trimester spontaneous and induced abortion, from March 2015 to June 2015 were included in the study. **Results:** Out of 77 women included in the study 32 (41.56%) had induced abortion. Most of the women (79.22%) admitted with abortion were in the age group 20 to 29 years and belonged to low socioeconomic group (81.82%). Almost half of the women with abortion had gestation age >9 weeks (50.65%) and 2/3rd women with induced abortion had taken medical abortion pill after 9 weeks of gestation. In the induced abortion group 30 women out of 32 had taken abortifacient pill, 18 (60%) from chemist without prescription, 6 (20%) were prescribed by qualified practitioner and 6 (20%) on advise of local birth attendants, neighbours or relatives. **Conclusion:** There is a need to increase awareness among women regarding the timing of medical induced abortion.

Introduction

Early pregnancy loss carries risk of incomplete evacuation, sepsis and instrumentation along with psychological and emotional trauma. It is estimated that out of 211 million pregnancies that occur each year, around 46 million (21.8%) end in abortion.[1] Majority of gynaecological admissions are the result of abortion complications, incurring a heavy cost on the health care resources. Despite legalising termination of early pregnancy in India for more than 3 decades, many women still opt for abortion conducted by untrained personnel or by self-administered abortifacients. Unsafe abortions account for around one eighth of pregnancy related mortality. This study was designed to find out the clinical and demographic profile of women admitted in a tertiary care hospital with spontaneous and induced first trimester abortions.

Material and Methods

It was a cross sectional observational study conducted in the Department of Obstetrics and Gynaecology, Vardhman Mahavir Medical College and Safdarjung Hospital. All women admitted in the hospital from March 2015 to June 2015 due to complications arising as a result of first trimester pregnancy loss were included in the study. The women with more than 13 weeks gestation and those admitted for medical termination of pregnancy in day care and managed on OPD basis were excluded from the study. A written informed consent was taken. All consenting women in the study were contacted at the time of discharge from hospital to assess the final outcome. Data was collected on the client's socio-demographic characteristics, gynaecological and obstetric histories, whether or not the miscarriage was induced, and if so, persons initiating abortion. Other information gathered were estimated gestational age at the time of abortion and management done at hospital. The morbidities and treatment associated with the current admission were extracted from the clinical records. All data collected was entered in pre-designed questionnaire. The distribution and relative frequencies of the variables were summarised.

Results

During the study period of 4 months, 77 women were admitted in the hospital with induced and spontaneous abortion, of which, 32 (41.55%) had induced abortion and 45 (58.44), had spontaneous abortion. The demographic and clinical profile of these women is shown in Tables1 and 2. In the induced abortion group 30 women out of 32 had taken abortifacient pill, 18 (60%) from chemist without prescription, 6 (20%) were prescribed by qualified practitioner and 6 (20%) on advise of local birth attendants, neighbours or relatives. The total number of days of hospital stay and need for blood transfusion was more in the induced group as compared to the spontaneous abortions (2.3days vs 1.7 days and 68.75% vs 42.2% respectively).

Discussion

This study observed that almost 80% of women admitted with abortion related complications were between 20-29 years of age. Other authors have also reported similar observations; this could be due to highest fertility in this age group.[2]Almost half of the women in this study group were nulliparous, however, induced abortions were more in women with 3 or more deliveries. The difference may

Table 1: Demographic profile of women admitted with induced or spontaneous abortion

Demographic parameters	Total abortions n=77		Induced abortion n=32		Spontaneous abortion n=45	
	N	%	N	%	N	%
Age (years)						
<20	7	9.09	3	9.38	4	8.89
20-24	27	35.06	5	15.63	22	48.89
25-29	34	44.16	20	62.50	14	31.11
30-34	8	10.39	4	12.50	4	8.89
≥35	1	1.30	0	-	1	2.22
Parity						
Nulliparous	35	45.45	2	6.25	33	73.33
Para 1 & 2	23	29.87	12	37.50	11	24.44
Para ≥3	19	24.68	18	56.25	1	2.22
Socioeconomic Status						
Lower	63	81.82	27	84.38	36	80
Middle	14	18.18	5	15.63	9	20

Table 2: Clinical profile of women admitted with induced or spontaneous abortion

Clinical Parameters	Total abortions		Induced abortion		Spontaneous abortion (%)	
	N	%	N	%	N	%
Period of gestation (weeks)						
<7	2	2.60	0	-	2	4.44
7-9	36	46.75	11	34.38	25	55.56
10-13	39	50.65	21	65.63	18	40.00
Treatment taken before admission						
Surgical Evacuation	21	27.27	19	59.38	2	4.44
Pill intake	30	38.96	30	93.75	0	-
Condition at admission						
Moderate to severe anaemia	41	53.25	22	68.75	19	42.22
Hypovolemic shock	3	3.90	3	9.38	0	-
Treatment after admission						
Evacuation	65	84.41	28	87.50	37	82.30
Medical management	10	12.99	2	6.25	8	17.70
Laparotomy	2	2.60	2	6.25	0	-
Post procedure complications						
Fever	3	3.90	3	9.38	0	-
Injectable antibiotics	14	18.18	12	37.50	2	4.44
ICU admission	1	1.30	1	3.12	0	0.00
Blood transfusion	41	53.25	22	68.75	19	42.22
Duration of hospital stay			2.3 days		1.7 days	

be due to parous women having completed the family and relying more on abortions than regular contraception for restricting family size.[3]Around 80% of women belonged to lower socioeconomic group and none were from high income group; may be due to preference of high income group women for private clinics and study being done in a government institute.[3]

More than 90% women admitted with abortion related complications had period of gestation ≥7 weeks and 2/3rd (65.63%) of women with induced abortions had

gestation >9 weeks, which is more than the gestation recommended, for performing medical abortion safely. Most of the women had undergone interference before coming to hospital in the form of medicine intake or surgical evacuation. Moderate to severe anaemia complicated 53.25% women with abortion. At the time of admission, hypovolemic shock due to excessive bleeding was present in 3 women and all were in the induced group with medical abortion done at >9 weeks gestation. There were 2 laparotomies done one each for bowel injury and septic abortion; both women had evacuation done for unwanted pregnancies at village by untrained personnel. The overall febrile morbidity was higher and more severe in the induced group; the only admission to ICU was also from the induced group.

Despite liberal MTP Act in India, most women (80%) in this study had induced abortions done by illegal means. This could be due to the fact, that the gestational age of many women requesting MTP by medical means falls beyond the permitted limit and also unavailability of free of cost MTP pills at government centres.

Conclusion

There is a need to increase awareness among women regarding the complications related to induced abortion done outside the prescribed guidelines and to encourage them to use the authorized health facilities for availing MTP services.

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The Good News

It is much beyond those purple lines
It is not just a kit but a rainbow in the making
It brings pride and empowers women
Brings closer the joys of motherhood
Overwhelmed by the gamut of emotions
From the anxiety of a miscarriage to the
Jubiliation of a healthy newborn
It is a tedious journey with a most awaited
Destination 'the good news'

-Dr Sarita Singh

Proposed Ammendments for 2nd Trimester Abortion

Compiled by Achla Batra[1], Pratima Mittal[2]
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Notified list of major abnormalities

This list of major fetal abnormalities shall be notified by The Ministry of Health and Family Welfare. These major abnormalities shall be those defined below and identifiable prenatally The list shall be generated and maintained with the inputs and advice from an expert panel and shall be open to review and modification from time to time. The purpose of notified list is to permit the termination of affected pregnancies conditional to the presence of these listed abnormalities

Classification of notified major abnormalities

Central nervous system abnormalities

Anencephaly
Arnold-Chiari Malformation
Cerebellar hypoplasia
Corpus callosum agenesis with additional major abnormalities
Craniosynostosis - syndromic
Dandy Walker syndrome
Encephalocele
Holoprosencephaly - alobar and semilobar
Hydrocephalus over 20 mm with dilatation of all ventricles
Hydranencephaly
Inencephaly
Intracranial tumors
Meganecephaly
Meningomyelocele with severe hydrocephalus
Microcephaly
Porencephaly with ventriculomegaly over 12mm
Schizencephaly

Cardiovascular abnormalities

Absent pulmonary valve syndrome
Aortic arch coarctation or interruption
Aortic stenosis or atresia
Atrial or ventricular tumors
Coronary anomalies
Complex ventricular septal defects
Double outlet right or left ventricle
Ebstein's anomaly of the tricuspid valve or Uhl's anomaly
Ectopia cordis
Hypoplastic right or left heart syndromes
Mitral stenosis, mitral atresia, mitral regurgitation
Pulmonary stenosis or atresia
Resistant arrhythmias with fetal hydrops
Single ventricle
Tetralogy of Fallot
Transposition or corrected transposition of the great arteries
Tricuspid stenosis, tricuspid atresia, tricuspid regurgitation
Ventricular dysfunction - right or left

Musculoskeletal abnormalities

Achondroplasia
Achondrogenesis
Arthrogryposis congenita multiplex with thin ribs with polyhydramnios
Asphyxiating thoracic dysplasia (Jeune's Syndrome)
Campomelic dysplasia
Chondrodysplasia punctata
Congenital hypophosphatasia
Jarcho-Levin Syndrome
Lethal skeletal dysplasia
Limb-body wall complex
Myotonic dystrophy
Osteogenesis imperfecta - type II and III
Phocomelia
Short rib polydactyly syndromes
Sirenomelia
Thanatophoric dysplasia

Gastrointestinal abnormalities

Large ventral wall defects - gastroschisis or omphalocaele
Megacystis-microcolon-intestinal hypoperistalsis syndrome

Urinary tract abnormalities

Bilateral renal agenesis
Bladder exstrophy
Cloacal exstrophy
Posterior urethral valve with bilateral hydronephrosis with severe oligohydramnios
Potter Type I - Autosomal recessive polycystic kidney disease
Potter type II - Bilateral Multicystic dysplastic kidney with severe oligohydramnios
Unilateral multicystic dysplastic kidney with contralateral renal agenesis

Thoracopulmonary abnormalities

Bilateral cystic adenomatoid malformation of lungs
Congenital diaphragmatic hernia with mediastinal compression and associated polyhydramnios
Congenital high airway obstruction (CHAOS) with hydrops
Pulmonary hypoplasia

Facial abnormalities

Bilateral anophthalmos or severe microphthalmia

Severe micrognathia associated with other non-correctable abnormaities

Chromosomal abnormalities
Tetrasomy 12p (Pallister-Killian Syndrome)
Trisomy 13, 18 or 21
Triploidy
Unbalanced chromosomal rearrangements

Single gene disorder
Beta thalessemia
Congenital muscular dystrophy
Cystic fibrosis
Fragile X syndrome
Myotonic dystrophy
Spinal muscular dystrophy

Fetal syndromes
Referenced from the OMIM Morbid list
www.ncbi.nlm.nih.gov

Dermatological abnormalities
Epidermolysis bullosa lethalis
Halequine Icthyosis or congenital icthyosis
Restrictive dermopathy

Other abnormalities
Anhydramnios associated with more than 2 major non-correctable structural fetal abnormalities
Conjoint twins
Fetal akinesia deformation sequence
Rapidly growing fetal tumours and hydrops

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Journal Scan

Sunita Malik[1], Deepika[2]
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Effectiveness of gefitinib in combination with methotrexate in the treatment of ectopic pregnancy.

Capmas P, Fernandez H.; Int J Womens Health. 2015 Jul 3;7:673-6.

Abstract: Medical management for ectopic pregnancy is subject to substantial variations with different protocols and various routes of administration. Regardless of the protocol used, methotrexate is currently the medical treatment of choice for ectopic pregnancy. The risk of a rescue surgery is a main concern. Recently, some studies suggested combining gefitinib and methotrexate to improve medical treatment and to decrease the need for reinjection and for additional surgery. Gefitinib is an orally administered EGF receptor-tyrosine kinase inhibitor. For tubal ectopic pregnancy, median recovery time was shorter after combination treatment with gefitinib and methotrexate. Toxicity reported with combination treatment was acneiform rash in 67% of cases and diarrhoea in 42%. They were always transient and are known side effects of gefitinib previously described in lung cancer. Thus for ectopic pregnancy, combining treatment seems to be interesting but results of the first randomized trial have to be evaluated first. For other indications, such as non-tubal ectopic pregnancy or choriocarcinoma, randomized studies are needed before wide use of the combination in current practice.

Neurodevelopmental delay in children exposed in utero to hyperemesis gravidarum.

Fejzo MS, Magtira A, Schoenberg FP, Macgibbon K, Mullin PM.; Eur J Obstet Gynecol Reprod Biol. 2015 Jun;189:79-84.

Objective: The purpose of this study is to determine the frequency of emotional, behavioural, and learning disorders in children exposed in utero to hyperemesis gravidarum (HG) and to identify prognostic factors for these disorders. **Study design:** Neurodevelopmental outcomes of 312 children from 203 mothers with HG were compared to neurodevelopmental outcomes from 169 children from 89 unaffected mothers. Then the clinical profiles of patients with HG and a normal child outcome were compared to the clinical profiles of patients with HG and a child with neurodevelopmental delay to identify prognostic factors. Binary responses were analyzed using either a Chi-square or Fisher Exact test and continuous responses were analyzed using a t-test. **Results:** Children exposed in utero to HG have a 3.28-fold increase in odds of a neurodevelopmental diagnosis including attention disorders, learning delay, sensory disorders, and speech and language delay ($P<0.0005$). Among characteristics of HG pregnancies, only early onset of symptoms (prior to 5 weeks gestation) was significantly linked to neurodevelopmental delay. We found no evidence for increased risk of 13 emotional, behavioural, and learning disorders, including autism, intellectual impairment, and obsessive-compulsive disorder. However, the study was not sufficiently powered to detect rare conditions. Medications, treatments, and preterm birth were not associated with an increased risk for neurodevelopmental delay. **Conclusion:** Women with HG are at a significantly increased risk of having a child with neurodevelopmental delay. Common antiemetic treatments were not linked to neurodevelopmental delay, but early symptoms may play a role. There is an urgent need to address whether aggressive treatment that includes vitamin and nutrient supplementation in women with early symptoms of severe nausea of pregnancy decreases the risk of neurodevelopmental delay.

Preimplantation Genetic Diagnosis and Natural Conception: A Comparison of Live Birth Rates in Patients with Recurrent Pregnancy Loss Associated with Translocation.

Ikuma S, Sato T, Sugiura-Ogasawara M, Nagayoshi M, Tanaka A, Takeda S.; PLOS One. 2015 Jun 17;10(6).

BACKGROUND: Established causes of recurrent pregnancy loss (RPL) include antiphospholipid syndrome, uterine anomalies, parental chromosomal abnormalities, particularly translocations, and abnormal embryonic karyotypes. The number of centers performing preimplantation genetic diagnosis (PGD) for patients with translocations has steadily increased worldwide. The live birth rate with PGD was reported to be 27-54%. The live birth rate with natural conception was reported to be 37-63% on the first trial and 65-83% cumulatively. To date, however, there has been no cohort study comparing age and the number of previous miscarriages in matched patients undergoing or not undergoing PGD.

Objective: we compared the live birth rate of patients with RPL associated with a translocation undergoing PGD with that of patients who chose natural conception. **Methods:** After genetic counselling, 52 patients who desired natural conception and 37 patients who chose PGD were matched for age and number of previous miscarriages and these comprised the subjects of our study. PGD was performed by means of fluorescence in situ hybridization analysis. The live birth rates on the first PGD trial and the first natural pregnancy after ascertainment of the carrier status were 37.8% and 53.8%, respectively (odds ratio 0.52, 95% confidence interval 0.22-1.23). **Results:** Cumulative live birth rates were 67.6% and 65.4%, respectively, in the groups undergoing and not undergoing PGD. The time required to become pregnancy was similar in both groups. PGD was found to reduce the miscarriage rate significantly. The prevalence of twin pregnancies was significantly higher in the PGD group. The cost of PGD was $7,956 U.S. per patient. **Conclusions:** While PGD significantly prevented further miscarriages, there was no difference in the live birth rate. Couples should be fully informed of the similarity in the live birth rate, the similarity in time to become pregnancy, the advantages of PGD, such as the reduction in the miscarriage rate, as well as its disadvantages, such as the higher cost, and the advantages of a natural pregnancy, such as the avoidance of IVF failure. The findings presented here should be incorporated into the genetic counselling of patients with RPL and carrying a translocation.

AOGD Clinical Meetings

On Friday 21st August, 2015 at AIIMS, followed by General Body Meeting.

The Clinical Meeting for the month of September will be held on Thrusday, 24th September, 2015 at RML Hospital (Friday, 25th September being a holiday on the occasion of Bakri-id)

FORTHCOMING EVENTS

- CME on "**Quest for Excellence in Obstetric Skill**" on 8th August, 2015, 10.00 am - 4.00 pm; Venue: Swaran Jayanti Cafeteria LHMC & SSKH, New Delhi.
- **AOGD Endoscopy and Endometriosis Subcommittees** hands on course in Hysteroscopy, Laparoscopy and Vaginal Surgery on 13th & 14th August, 2015 and endometriosis video workshop on 22nd August, 2015 at Fortis Flt Lt Rajan Dhall Hospital, Vasant Kunj. Dr. UP Jha M: 9811029310, Dr. Neema Sharma M: 9911057456, Dr. Ramandeep M: 9810605842 for registration.
- "**22nd Annual Conference of NARCHI Delhi Branch**" on 22nd & 23rd August, 2015 at Scope Complex Lodhi Road, Delhi. PG Quiz on "Contraception". Last Date of Registration & Abstract Submission is 31st July, 2015. For details contact website www. Narchidelhi.org. Contact No. 9868399724, 9868399730.
- **CME on Dilemmas in infertility** Under Aegis of Indian Fertility Society and Infertility Committee of AOGD on 26th August, 2015, 1.00 pm - 5.00 pm, Vikram Hotel, under Moolchand flyover. No Registration Fee.
- **"FENIX- 2015"-** Annual Conference of Delhi Gynaecological Endoscopists Society with theme Fertility and Beyond: Inception to Xcellence organized by Department of Obstetrics and Gynaecology, AIIMS in collaboration with GESI from 28th to 30th August, 2015 at JLN Auditorium, AIIMS, New Delhi.
- **"Eighteenth PG Practical Course and CME**" to be organized by Department of Obstetrics and Gynaecology, Maulana Azad Medical College, New Delhi on 9th, 10th and 11th October, 2015 at MAMC Auditorium, Bahadur Shah Zafar Marg, New Delhi. For details please visit MAMC website: www.mamc.ac.in
- CME organized by **"Multi Disciplinary Patient Management"** Committee of AOGD in association with North Zone - AICC RCOG on Saturday, 19th September, 2015, 3:00 pm - 5:00 pm at Indraprastha Apollo Hospital. Free registration. Inform by 14th September, 2015 to drsohaniverma@gmail.com; M: 09810116623.
- FOGSI Conference **"UPCOG 2015"** at Kanpur from 27th - 30th November, 2015; visit www.nationalupcog2015.com. Early bird registration till 15th August, 2015.

Proceedings of Monthly AOGD Clinical Meeting held at Holy Family Hospital on 31st July, 2015

Compiled by Archana Misra
Assistant Professor, Obs & Gynae, VMMC & Safdarjung Hospital, New Delhi

Two interesting cases were presented along with a video presentation on Breech delivery.

Case 1

Subclavian artery stenosis in pregnancy- A case report

Raka Guleria[1], Neha Kwatra[2]
[1]Senior consultant, [2]DNB resident, Obs & Gynae Holy Family Hospital

A 27 year old G2A1 at 30+6 weeks of gestation presented with history of swelling over body, retro orbital pain and hypertension since 1 week. On admission, she was found to have raised blood pressure with asymmetry in blood pressure in both the upper limbs. Supraclavicular bruit was auscultated. Blood investigations revealed raised uric acid levels. Ultrasound was suggestive of reduced diastolic flow in umbilical artery in fetal doppler study. Fundoscopy was normal. She was started on antihypertensives and investigated further. Her 2- D Echo was normal. Venous Dupplex was done which showed monophasic high velocity flow with obstruction at the subclavian artery and normal aorta. A diagnosis of subclavian artery stenosis with differential diagnosis of Takayasu's arteritis in pregnancy was made. In view of rising levels of uric acid and doppler changes, elective cesarean section was done at 32 weeks of gestation and patient delivered a female baby of 1.9 kg. Subsequently patient was discharged on post operative day 5 in satisfactory condition on anti hypertensives. She was advised arterial biopsy for confirmation of diagnosis.

Conclusion- Meticulous attention to clinical examination is helpful in diagnosis of rare disorders complicating pregnancy such as seen above.

Case 2

PRES in Pregnancy: A Case Report

Ratna Rao Narasimham[1], Ramya Mishra[2]
[1]Senior Consultant, [2]DNB Resident, Obs & Gynae Holy Family Hospital

A booked case of 29 years Primigravidae at 37+5weeks pregnancy with hypothyroidism & obstetrics cholestasis was admitted for induction of labour. Her emergency LSCS was performed due to persistent fetal & maternal tachycardia. She delivered a live baby of 3.2 kg with good APGAR score. On third post operative day she developed stiffness of hands and deviation of mouth and face along with blurring of vision. Her vitals were stable apart from tachycardia of 124/min & blood pressure 130/80 mmHg. Subsequently, she had an episode of giddiness followed by 2 episodes of convulsions with persistent tachycardia and rising blood pressure of 160/110 mmHg. She was immediately shifted to ICU and treated with full dose of MgSo4 and antihypertensive.

All routine & special investigations were done including coagulation profile, LFT, RFT, Serum calcium and magnesium levels, ANA, dsDNA, ECG, ECHO and LP were found with in normal range. MRI Brain with contrast was suggestive of **Posterior Reversible Encephalopathy Syndrome** with sequelae of patchy chronic small vessel ischemia/ vasospasm in frontoparietal region. Her EEG revealed- profound cerebral dysrrhythmia and her fundoscopy was normal. She was treated with Inj. Phenytoin and improved. Patient was discharged in satisfactory condition on oral Phenytoin on POD 6 with advice of follow up in OPD.

Conclusion- PRES is a clinic-neuro-radiological condition where early diagnosis is crucial for preventing maternal mortality & morbidity. PRES needs to be ruled out in any patient who presents with seizures and visual symptoms.

Before you were conceived I wanted you
Before you were born I loved you
Before you were here an hour I would die for you
This is the miracle of Mother's Love.
- Maureen Hawkins

Brain Teasers

Monika Gupta
Assistant Professor
Dept. of Obs & Gynae, VMMC & Safdarjung Hospital, New Delhi

We have been receiving an overwhelming appreciation for the bulletin from all our members. This newly introduced section of Brain-teasers has received a special mention. Our members' participation in form of response to the Quiz will be a value addition to our endeavours. We have a **lucky dip** for all the right answers received and winner's name will be announced in the next monthly AOGD clinical meeting. So, mail your answers to **aogdsjh2015@gmail.com within 7 days of receipt of the bulletin.**

1. On HPLC (High Performance Liquid Chromatography) which of the following values of HbA2 are diagnostic of Thalassemia Minor:
   a. > 2.5
   b. < 2.5
   c. > 3.5
   d. < 3.5

2. Which of the following test is the most economical mass screening test available for Thalassemias
   a. Naked eye single tube red cell osmotic fragility test
   b. Cell free fetal DNA testing in maternal blood
   c. Amniocentesis
   d. HPLC

3. By 5th of every month the monthly statement of the cases of MTP's in an approved centre has to be submitted to CMO of the district in
   a. Form - I
   b. Form - II
   c. Form – III
   d. Form - C

4. According to POCSO Act 2012, it is necessary to inform the police and prepare a medico legal document for MTP in females
   a. > 16 yrs
   b. < 18 yrs
   c. < 21yrs
   d. > 18 yrs

5. All of the following are contraindications of Medical Methods of Abortion (MMA) except
   a. Severe renal disease
   b. Ectopic pregnancy
   c. Haemoglobin < 10gm%
   d. Valvular heart disease

6. Which of the following is true when a woman is counselled about Medical Methods of Abortion (MMA)
   a. Needs minimum of three visits to the facility
   b. should remain in the facility for 12-24 hours following misoprostol administration
   c. 20% may expel with mifepristone alone
   d. may have vaginal bleeding for 25-30 days

7. As regards postabortal contraception after MTP which of the following is not true
   a. COC's from day 3 of MMA
   b. COC's from day 7 of surgical MTP
   c. IUD along with vacuum aspiration
   d. COC's from day 15 of MMA

8. Which of the following screening tests enhances the performance of the first trimester combined test
   a. Serum LDH
   b. Placental Growth Factor
   c. Unconjugated estriol
   d. Human Placental lactogen

9. Ultrasound parameters studied for screening of Down's syndrome in first trimester other than Nuchal translucency are all of the following except
   a. Ductus venosus flow velocity waveform
   b. Fetal heart rate
   c. Tricuspid atresia
   d. Nasal bone

10. According to ACOG 2012 which of the following changes in β-hCG values after 48 hours is suggestive of an abnormal pregnancy
    a. Increase > 66%
    b. Increase < 53%
    c. Decrease > 66%
    d. Decrease < 53%

Answers to quiz 3: 1. c; 2. d; 3. b; 4. b; 5. a; 6. c; 7. a; 8. c; 9. b; 10. a

The correct answers (of Quiz 3) were given by Dr Anita Rajorhia and Dr Kusum Aggarwal. Dr Anita won the lucky dip and was awarded the prize; Congratulations to both our winners!

Royal College of Obstetricians & Gynaecologists-AICC- Northern Zone India

Website: **www.aiccrcognzindia.com**

Chairperson: Dr Sohani Verma: (drsohaniverma@gmail.com / 9810116623)

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Announcing next Course

The RCOG UK MRCOG Part II Enhanced Revision Programme (ERP) Package

Integrated distance and classroom learning course (August 2015 – January 2016)
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Package Course Fee: Rs 70,000 (includes Part 2 Written and OSCE Combined Course)

UK Conveners - Dr John Duthie, Dr Moshen Iskander and Dr Sanjeev Sharma

India Conveners and Contacts for details - Dr Saritha Shamsunder (shamsundersaritha@gmail.com/ 9313826748)
Dr Sweta Gupta (swetagupta06@yahoo.com/8130140007)
Dr Puneet Kochhar (drpuneet.k20@gmail.com/9953001628)

Registration Guidelines (Online registration available on website)

- **Eligibility Criteria: Atleast 70% pass marks for screening test before the online lessons. Only those who pass the screening test can register**
- Bank Transfer or Demand Draft must be made in favour of "RCOG NZ 2012 Plus" payable at New Delhi. (cheques not accepted).
- There will be no refunds on cancelation
- Registration request along with Demand Draft to be posted to the Secretariat mailing address as given below:-

Mailing Address: **RCOG North Zone Secretariat**
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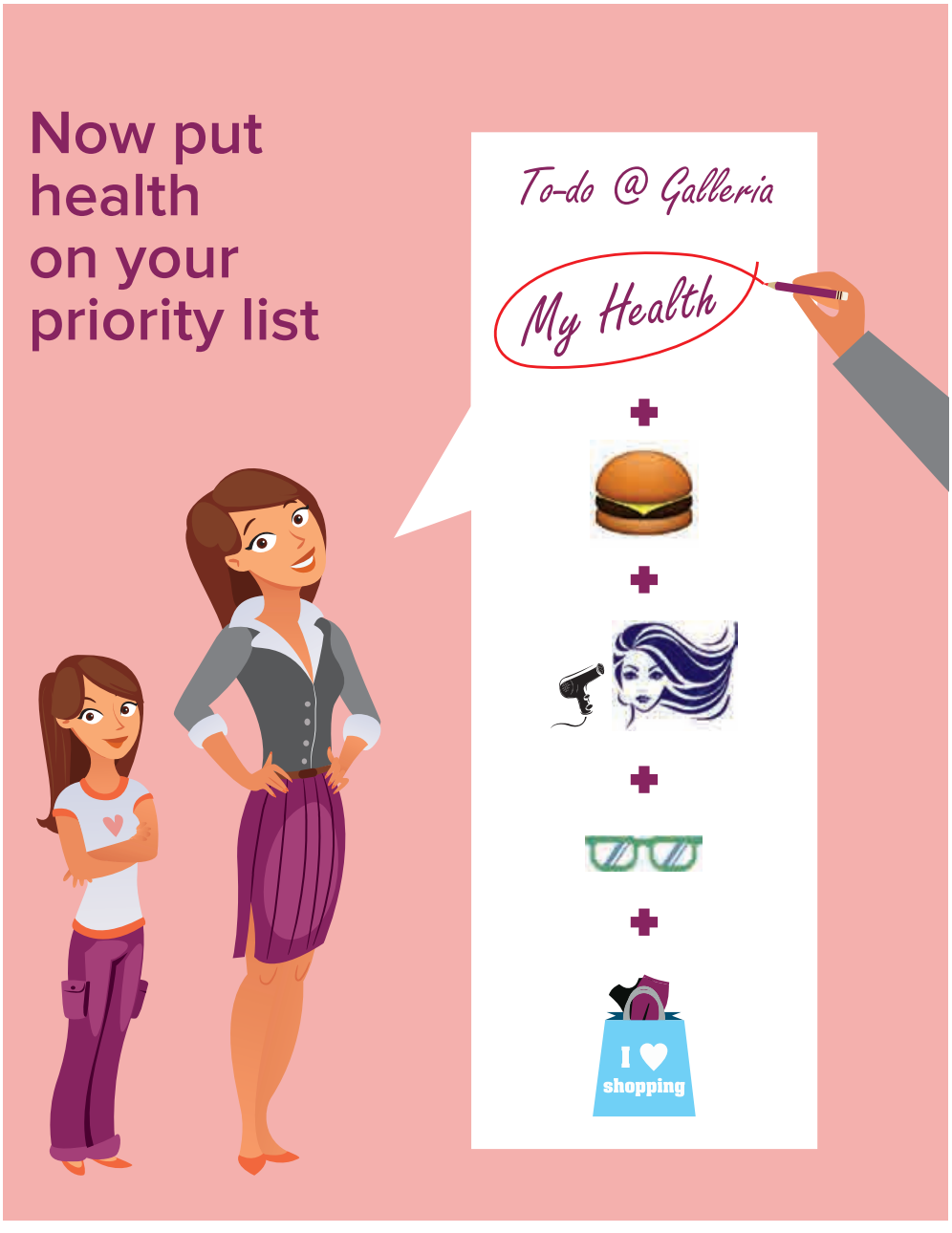

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