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AMOGS UPDATE

VOL. 3

AMOGS President's message

It gives me great pleasure to know that the AMOGS Update newsletter is now ready for release. In these difficult times during the pandemic of COVID-19, all of us need to take the necessary precautions, use personal protective equipment and restrict our practice to the most essential emergency and obstetric cases. The health and safety of ourselves, our staff and our families remains an important responsibility on our shoulders at this time.

We have lost so many of our brave colleagues to this pandemic and our hearts go out to everyone fighting a daily battle against this deadly disease. We are shocked and saddened at the recent passing of Dr Parag Patil, Chairperson AMOGS Sexual Medicine. Our heartfelt condolences to his family and friends.

Through this AMOGS Update newsletter, the editors Dr Pratik Tambe, Dr Ameya Purandare and Dr Rohan Palshetkar have chosen to address contemporary important issues in the field of obstetrics. The articles include an outline of antenatal care, a synopsis of the current options for medical and surgical treatment of fibroids and an abridged guideline for fertility preservation in adolescents with adnexal torsion. They will be of interest to everyone in their day-to-day practice.

LaQshya-Manyata is a joint initiative between the National Health Mission, Government of Maharashtra, AMOGS and FOGSI, aimed at improving quality of private maternity care in the state of Maharashtra by building skilled and capable teams ensuring consistent, safe and respectful care for mothers during and after childbirth. The 26 standards defined under the initiative are in line with the national government's LaQshya program and World Health Organization (WHO) standard guidelines. I strongly urge all of you to get certified and offer respectful maternal care to all our patients.

I congratulate the editors for their efforts towards bringing out this newsletter and wish them all the very best. We hope you enjoy this AMOGS Update and look forward to your comments and suggestions. If you would like to contribute articles of topical interest for subsequent issues, please feel free to get in touch with us and we look forward to publishing your contributions in the future!

Dr Nandita P. Palshetkar

Dr Nandita Palshetkar
President AMOGS 2020 - 22

IN MEMORIAM

Dr Parag Patil,
Chairperson AMOGS Sexual Medicine Committee

We mourn the passing of one of our stalwarts, Dr Parag Patil, who was a gentle humble and hardworking soul.

Ever at the forefront of academics, disseminating knowledge to young minds and conducting Q and A sessions in his unique manner, Dr Parag Patil was one of the pillars of MOGS, AMOGS, IMA and all the organisations that he was a part of.

He graduated from the Seth GS Medical College, later did his MD from JJ Hospital, Mumbai and maintained close ties with the alumni of these institutions. Practicing in the resource poor suburb of Kalyan, Dr Parag Patil helped bring modern practices to the forefront by organising RTMs, CMEs and conferences which we all looked forward to.

Besides being an avid proponent of women's sexual and reproductive rights, Adolescent Health was a key component of his crusade toward a better tomorrow for the youngsters and future of India.

We are deeply saddened and shocked by the tragic news of our dear friend and colleague making the ultimate sacrifice and offer our condolences to the bereaved family and his friends. We have lost one of our finest to COVID-19!

- AMOGS Family

AIM AND STRUCTURE OF ANTENATAL CARE IN THE DEVELOPING WORLD

Dr Rohan Palshetkar
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Introduction

Pregnancy, childbirth, menopause are natural and normal events in the life of a woman. Almost around 60 to 70 percent of childbirths and pregnancies happen naturally but still there are few around 20 percent births and pregnancies which are associated with complications. A few of these complications may be life threatening for the mother and baby or for both.

Antenatal care (ANC) is of utmost importance in early detection of complications so that they can be managed in an appropriate and timely manner. Through various government organisations, India is on the verge of providing the best ANC by universal coverage of all births with skill attendants both at a community as well as institutional level. This entails providing access to emergency obstetric and neonatal care services for women and newborns thereby reducing maternal and neonatal morbidity as well as mortality.

Maternal morbidity and mortality

Maternal death is defined as the death of a woman while pregnant or within 42 days of the termination of pregnancy (delivery or abortion), irrespective of the duration and site of pregnancy, from any cause related to or aggravated by pregnancy or its management, but not due to accidents, trauma or incidental causes.

The 5 major direct obstetric causes of maternal mortality in India are haemorrhage, puerperal sepsis, hypertensive disorders of pregnancy, obstructed labour and unsafe abortions which contribute to about 70% of maternal deaths in the country. Fetal and neonatal complications like preterm birth, birth asphyxia, intrapartum related neonatal death and neonatal infections together are responsible for more than 85% of neonatal mortality and morbidity.

Other factors such as maternal anaemia, adolescent pregnancies, elderly primigravidae, grand multiparae are at higher risk of developing complications during pregnancy and labour. These patients should be detected early and timely management can save most of these lives and reduce mortality as well as morbidity.

Basic concepts of ANC

Antenatal care is the care of the woman and fetus in pregnancy before delivery and labour. A properly devised antenatal follow-up provides necessary care to the mother and helps identify complications of pregnancy such as anaemia, pre-eclampsia and hypertension, diabetes etc. in the mother and slow/inadequate growth of the foetus. Antenatal care helps in the timely management of complications by referring patient to tertiary care centre for further treatment. It also provides a chance and time for making

decisions and deciding the plan of action, mode of delivery, facilities and to make necessary arrangements if required.

To combat maternal mortality few points and measures are to be taken into account like:

- awareness of the danger signs in pregnancy
- Early ANC registrations
- Institutional deliveries
- Easy accessibility to health care services
- Management of emergencies
- Tertiary care centres with ICU and NICU facilities
- Trained staff and health care providers

A properly devised antenatal follow-up provides necessary care to the mother and helps identify complications of pregnancy such as anaemia, pre-eclampsia and hypertension, diabetes etc. in the mother and slow/inadequate growth of the fetus.

Primary steps:

1. Early registration with in first 3 month of pregnancy

At least four antenatal check-ups (including the first visit for registration)
1st visit: Within 12 weeks—preferably as soon as pregnancy is suspected .
2nd visit: Between 14 and 26 weeks
3rd visit: Between 28 and 34 weeks
4th visit: Between 36 weeks and term

2. Starting Folic acid supplements in first visit.
3. Administer two doses of TT injection.

Essential components of every antenatal check-up:

1. Take the patient's detailed history which includes personal details, menstrual history, obstetric history (check for complications in previous delivery if any), family history, addiction, medical and surgical history, any major illness in the patient and in her family.
2. Conduct a physical examination–measure the weight, blood pressure and respiratory rate and check for pallor and oedema. This helps to record the baseline parameters and which will be easy to compare for further pregnancy care.
3. Conduct abdominal palpation for fetal growth, fetal lie and auscultation of Fetal Heart Sounds (FHS) according to the stage of pregnancy.
4. Carry out laboratory investigations such as CBC, Urine routine microscopy, HIV, Hepatitis B, Hepatitis C, VDRL, Urine routine and microscopy, Blood sugar levels and thyroid profile.
5. Counselling the woman to plan and prepare for birth (birth preparedness/micro birth plan). This should include deciding on the place of delivery and the presence of an attendant at the time of the delivery.
6. Awareness about the benefits and necessity of institutional deliveries and risks involved in home deliveries.
7. Awareness about the danger and emergency signs not only to the pregnant woman but also to the husband and family members during the antenatal care and where to go if an emergency arises, and how to arrange for transportation, money and blood donors in case of an emergency.
8. Dietary advice, nutrition, antenatal exercise importance of breast feeding for both mother and the child, information on sex during pregnancy
9. Warn against domestic violence (explain the consequences of violence on a pregnant woman and her fetus).

10. Provide family planning options and alternatives.
11. Folic acid supplementation plays a very important role in prevention of neural tube defects. A dose of 0.5mg folic acid should be started in the first trimester which should be continued throughout the pregnancy and to be continued till 3 months postpartum.
12. Iron supplementation is also very important especially in our country where the prevalence of iron deficiency anaemia is very high. 100mg of elemental iron should be given daily starting from the second trimester till 3 months postpartum. In case the patient is anaemic, double oral iron or even parenteral iron can be considered.
13. Calcium supplementation should be promoted through calcium rich foods. The daily dose of calcium suggested is 1.5-2g daily. One should divide it through the day. Keep in mind the interaction between iron and calcium. Both the supplements should be administered several hours apart.
14. 2 doses of TT (tetanus toxoid) should be given to all patients in ANC period. According to WHO guidelines 1st dose of TT should be given at the first visit of patient to the ANC clinic. Women should get the tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis vaccine (Tdap) during each pregnancy. All pregnant women should get a Tdap shot in the third trimester, preferably between 27 weeks and 36 weeks of pregnancy. Tdap can be administered within 1 week postpartum if not given in ANC (please note that Tdap given postpartum doesn't provide immunity to the child).

First trimester care

1. Registration of the patient with personal details and provide health education and health promotion.
2. Detailed History
3. Calculate EDD/gestational age by LMP and physical examination.
4. Physical examination
5. Basic blood investigations
6. Obstetric ultrasound scan in first trimester on first visit.

First trimester screening

All patients should be offered aneuploidy screening. The main aim of this is to identify and detect women having an increased risk of Down's, Patau and Edwards' syndrome. The first trimester screening test includes a NT (Nuchal Translucency) scan and dual marker (beta-HCG and PAPP-A) which is done at 11-13 weeks gestation. It is important to remember this is only a screening test and not a diagnostic test. A chorion villous sampling (CVS) or amniocentesis maybe required to confirm the diagnosis if the screen is positive.

Since a sonography is being done for NT, other markers such as cervical length, uterine artery doppler can be done simultaneously to rule out high risk for preterm birth, development of pre-eclampsia and intrauterine fetal growth restriction.

NIPT (non-invasive prenatal testing)

It is a simple blood test which checks cell free fetal DNA in the maternal blood. But it is a screening test as well. It has a high sensitivity as well as specificity (99%) with a false positive rate of less 0.5%. The screening test provides information on the most common aneuploidies-trisomy 21, 18 and 13. This test can also detect monosomy X and sex chromosome aneuploidies. Some of the drawbacks are that the test is very expensive and if the test gives a positive screen, the patient still has to undergo CVS or Amniocentesis for confirmation.

Second trimester care

Second trimester screening

1. Physical examination
2. Basic blood investigations

Quadruple marker screening

The quadruple screen test is blood test done between 16-18 weeks of gestation. The test measures levels of 4 pregnancy hormones: alpha fetoprotein(AFP), human chorionic gonadotropin (hCG), unconjugated estriol (uE3) andinhibin A. The higher values has high risk of chromosomal anormalities and is an indication for the invasive genetic screening.

Fetal anomaly scan

It is done between 18-22 weeks of gestation where gross anomalies can be picked up. Structural anomalies should be followed up by a referral for high-resolution ultrasound and/or maternal-fetal medicine consultation by a specialist for confirmation, consultation, and discussion of risks/available testing options/therapeutic options.

Cardiac scan

with colour Doppler at 22-24 weeks is done for a detailed heart evaluation.

Third trimester care

1. Physical examination
2. Blood investigation including complete blood counts, liver function tests, kidney function tests, thyroid profile, blood sugars, urine routine tests are done at 32-34 week especially in high risk cases of eclampsia and pre-eclampsia.
3. Ultrasound with colour Doppler and biophysical profile are done to see the interval growth, placental position, fetal weight, blood flows and the presence of resistance.
4. Role of Biophysical Profile (BPP): it consists of a non-stress test (NST) combined with four observations (fetal breathing movements, limb movements, fetal tone/posture and amniotic fluid evaluation) made by real-time ultrasonography.

   Each of the five areas of the biophysical profile has a possible total score of two points, for a total of 10 points. A score of 8-10 is usually considered normal; 6 is considered equivocal (uncertain) and 4 or less is considered abnormal.

   Mode of delivery: At 36-38 weeks per vaginal examination of the patient should be done to assess regarding the mode of delivery, necessary arrangements, referrals should be done as per the situation and resources available.

References:

1. WHO : New guidelines on antenatal care for a positive pregnancy experience. 7 November 2016, Geneva.
2. Tunçalp WM Were et al. Quality of care for pregnant women and newborns — the WHO vision 01 May 2015.
3. Nilgun Guducu, Uzay Guducu et al. Quadruple test parameters in ART pregnancies. 2014.
4. Müller F, Dreux S, et al. A French Collaborative Group. Medically assisted reproduction and second-trimester maternal serum marker screening for Down's syndrome. Prenat Diagn. 2003;23:1073–1076.
5. Wilson RD. Amended Canadian Guideline for prenatal diagnosis (2005) change to 2005—techniques for prenatal diagnosis. SOGC Clinical Practice Guidelines, No. 168, November 2005. J Obstet Gynaecol Can. 2005;27:1048–1054.
6. John Dunn. Prenatal Care Guideline. Guideline Oversight Group in April 2018.
7. American College of Obstetricians& Gynecologists. Centers for Disease Control &Prevention 2019.
8. Antenatal care for uncomplicated pregnancies Clinical guideline [CG62] NICE guideline February 2019.

MEDICAL MANAGEMENT OF FIBROIDS

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Background

Uterine fibroids are the most common benign tumors in women and may be symptomatic oraymptomatic. Since many decades, surgery remained the mainstay of treatment of uterine fibroids, but in recent years few medical therapies are proposed in the treatment of fibroids especially to avoid surgery/ as a pre-surgery therapy/ to treat anaemia and menorrhagia in the reproductive age group depending on the size, location and the volume of the fibroid. We present below a brief review of the currently available options.

GnRH agonists

Act by inducing a hypoestrogenic, hypoprogestogenic state and thereby create an adverse environment for the fibroid. Three GnRH agonists are currently approved by the United States Food and Drug Administration (USFDA): leuprolide acetate, goserelin acetate and nafarelin acetate. An adverse effect unique to the use of these drugs for the treatment of fibroids is significant vaginal haemorrhage roughly 5–10 weeks after initiation of medication. This event is due to degeneration and necrosis of submucous myomas, and occurs in approximately 2 % of treated women.

A number of different add-back protocols can be used including estrogen/progestin, progestin alone (medroxyprogesterone or norethindrone) and androgen (tibolone). This reduces the vasomotor symptoms, but progestins derived from progesterone (such as medroxyprogesterone) tend to preserve bone less well than norethindrone, whose breakdown products include ethinyl estradiol.The effect of GnRH agonists reduces leiomyoma cell size and is not cytotoxic. With cessation of the drug there is a return in fibroid size within 3–4 months.

GnRH antagonists

They act by directly competing for and occupying pituitary GnRH receptors. Their action is by blocking the access of the GnRH molecule to the GnRH receptors, resulting in pituitary suppression of gonadotropin secretion. Nonsteroidal anti-inflammatory drugs (NSAIDs) can be used when required for the pain relief. Tranexamic acid is a procoagulant which reduces blood loss during menstruation. 500 mg dose can be given twice or thrice daily according to the severity and the need.

Ulipristal acetate (UPA) is a selective progesterone receptor modulator. It acts by improving menstrual symptoms and leads to regression in fibroid size. The regressive effects are usually maintained for 6 months, because the compound increases apoptosis of leiomyoma cells. 5 to 10 mg per day for 3 months is the standard dose. The course can be repeated with a gap of 1 or 2 normal periods. Inter-menstrual bleeding or spotting and amenorrhoea are usually observed with this therapy.[1]

Aromatase inhibitors

Letrozole 2.5 mg and **anastrazole** 1 mg per day given for 3 months directly inhibit estrogen synthesis by either blocking or deactivating aromatase and thereby the production of estrogens, particularly estrone and estradiol.[2]

Mifepristone(RU486) an oral antiprogesterone compound, has been used for more than 20 years for multiple indications. It has recently been evaluated as a potential drug for uterine fibroids with a dose that ranges from 5mg to 50mg over a 3-month period. Mifepristone reduced leiomyoma size (26-74%) and improved leiomyoma-related symptoms (63-100% induction of amenorrhea). Side effects include transient elevations in transaminases and endometrial hyperplasia.[3]

Gestrinone is a steroid that possesses antiestrogen receptor and antiprogesterone receptor properties in various tissues, including the endometrium. It is used at a dose of 2.5mg twice per week over a 6-month period.[4,5]

Danazol is a synthetic steroid that inhibits steroidogenesis through multienzymatic role in addition to its negative effect on sex hormone binding globulin. It reportedly induced a significant 24% volume reduction. However, a Cochrane review in 2009 failed to identify any randomised controlled trials that compared danazol to placebo or any other medical therapy in women with uterine fibroids.[6]

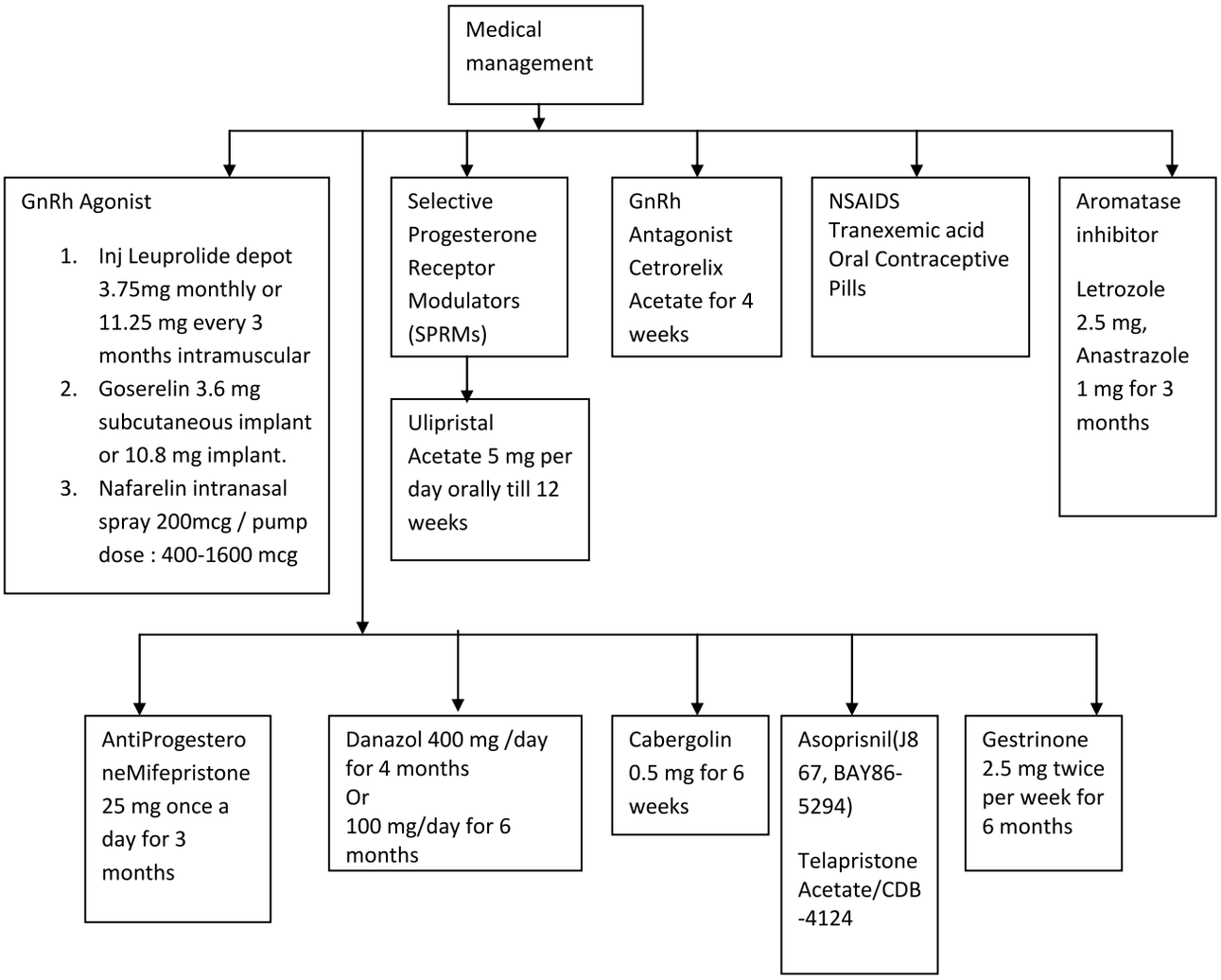
Asoprisnil (J867, BAY86-5294) is an investigational selective progesterone receptor modulator (SPRM) which was primarily developed for the treatment of progesterone-sensitive myomas. It induces unique morphological changes and is associated with inhibited proliferation of the endometrium and leiomyoma. These changes may lead to amenorrhea.[2]

Telapristoneacetate (CDB-4124) is another SPRM, but it is a relatively pure progesterone antagonist. It is still an experimental drug mainly for the treatment of perimenopausal women. Limited information or publications are currently available on the various clinical trials that have investigated CDB-4124.[2]

Carbergoline is a well-known dopamine agonist that is effectively used in the treatment of prolactinoma and for the inhibition of lactation. It was evaluated in 1994 as a therapeutic option for uterine fibroids since it has a negative effect on GnRH release.[7] However, its clinical utility is limited.

References

1. Donnez J, Tatarchuk TF, et al, PEARL I Study Group. Ulipristal acetate versus placebo for fibroid treatment before surgery. N Engl J Med. 2012.
2. Mohamed Sabry and AymanAl-Hendy.Innovative Oral Treatments of Uterine Leiomyoma.Obstetrics and Gynecology International Volume 2012.
3. J Steinauer, EA Pritts, R Jackson and AF Jacoby. Systematic review of mifepristone for the treatment of uterine leiomyomata. Obstetrics and Gynecology, Vol. 103 2004.
4. A. La Marca, S Giulini, G Vito, R Orvieto, A Volpe, and VM Jasonni.Gestrinone in the treatment of uterine leiomyomata: effects on uterine blood supply. Fertility and Sterility, Vol. 82, no. 6, pp. 1694–1696, 2004.
5. EM Coutinho. Treatment of large fibroids with high doses of gestrinone. Gynecologic and Obstetric Investigation, vol. 30, no. 1, pp. 44–47, 1990.
6. LQ Ke, K Yang, J Li and CM Li. Danazol for uterine fibroids. Cochrane Database of Systematic Reviews, no. 3, Article ID CD007692, 2009.
7. I Sivin and J Stern. Health during prolonged use of levonorgestrel 20 micrograms/d and the copper TCu 380Ag intrauterine contraceptive devices: a multicenter study. International Committee for Contraception Research (ICCR). Fertility and Sterility, vol. 61, 1994.
8. P Purohit and K Vigneswaran. Fibroids and Infertility CurrObstetGynecol Rep. 2016.
9. Aymara Mas, Marta Tarazona, et al. Updated approaches for management of uterine fibroids Int J Womens Health. 2017.


Medical management
GnRh Agonist
1. Inj Leuprolide depot 3.75mg monthly or 11.25 mg every 3 months intramuscular
2. Goserelin 3.6 mg subcutaneous implant or 10.8 mg implant.
3. Nafarelin intranasal spray 200mcg / pump dose : 400-1600 mcg
Selective Progesterone Receptor Modulators (SPRMs)
Ulipristal Acetate 5 mg per day orally till 12 weeks
GnRh Antagonist Cetrorelix Acetate for 4 weeks
NSAIDS Tranexemic acid Oral Contraceptive Pills
Aromatase inhibitor
Letrozole 2.5 mg, Anastrazole 1 mg for 3 months
AntiProgesteroneMifepristone 25 mg once a day for 3 months
Danazol 400 mg /day for 4 months
Or
100 mg/day for 6 months
Cabergolin 0.5 mg for 6 weeks
Asoprisnil(J867, BAY86-5294)
Telapristone Acetate/CDB-4124
Gestrinone 2.5 mg twice per week for 6 months

PREGNANCY AFTER TRANSPLANTATION

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First Joint Secretary, AMOGS
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Introduction

Normal gonadal function gets disrupted with end stage disease and pregnancies are uncommon. Fertility improves after successful transplantation of diseased organ and pregnancies are reported following transplant of kidneys, liver, lungs and bowel. Pregnancy is reported after uterine transplant which is reproductive organ transplant. In this article, discussion will revolve around pregnancy following non reproductive organ transplant, mainly kidney and liver transplant. Reports of 14,000 pregnancies have been reviewed through the registry but it appears to be an underestimation as reporting of pregnancy following transplant is not a norm.1Limited availability of data from registry and prospective study has led to improper design of evidence base guidance of care of pregnanttransplant recipient, the information that would be useful in imparting accurate advice for preconception counselling.

Preconception counselling

It should be offered to both transplant recipient and her partner. The original disease and potential risk of recurrence should be kept in mind while counselling, as it may be associated with its own pregnancy related comorbidities. The American Society for Transplantation (AST) consensus1 recommends that pregnancy is allowable if 1) no rejection in past year 2) adequate and stable graft function 3) no acute infection and 4) immunosuppressants at stable maintenance dose.

Kidney transplant

Fertility

Female and male patients with end stage kidney disease experience sexual dysfunction and infertility. Sexual functions improve after transplant. Infertility is caused by altered hypothalamic function leading to raised hormonal levels (FSH / LH / PRL)that returns to normal following transplantation leading to normal ovulatory cycles. Many women experience premature menopause, so age and risk of premature menopause should be considered while timing pregnancy.

Optimal contraception is advisable in patients of reproductive age group before undergoing transplant. Peritransplantation period is not the ideal time of pregnancy due to the use of potentially teratogenic / fetotoxic medication and optimization of immunosuppressants. The best contraception would be barrier but due to high failure rate is not advisable and so also IUD as it requires intact immune system for its efficacy. Progesterone only contraception is advisable and COCs can be used only if HT is under control and is not of long duration.

Historically, it was advisable to wait for 2 years posttransplant for pregnancy. Due to increasing age of transplant population, these guidelines are liberalized and waiting up to 6 months posttransplant in specific situation is permitted. American Society of Transplant Consensus2 opinion has stated that as long as graft function is optimal (serum creatinine < 1.5 mg/dL and urinary protein excretion of < 500 mg/24 hours), no fetotoxic infection (use of teratogenic / fetotoxic medications) and stable immunosuppressive dosage – pregnancy can be tried. The transplant recipients who undergo ART treatment needs to be counselled for the high possibility of multiple pregnancy which is more complicated. The main cause of concern being switch over to immunosuppressive agents which is steroid free without teratogenic effect in stable patient.

Immunosuppressants like MMF – mycophenolate mofetil and rapamycin have risk of fetal malformations and switching over to azathioprine is advisable atleast 6 weeks before trying for pregnancy. This switch over is concerning in stable patient who is on steroid free drug regimen.Posttransplant, for male recipients, no recommendation for fathering child are suggested.

Risksduring pregnancy

Maternal

Effect of pregnancy on maternal graft function/ graft independent co morbidities needs to be kept under surveillance. It is advisable to get pre pregnancy investigations like rubella, Rh status (Rh negative with kidney from Rh positive), HBsAg and other viral markers done. Pregnancy in patients with mild kidney disease (screatinine < 1.3 mg/dL) does not worsen the kidney function. Those with moderate to severe kidney disease experience decline in kidney function, hence pregnancy is not advisable because of increase chance of irreversible graft loss.

There is also risk of graft rejection due to increase in blood volume and change in immunosuppressants dosage. Therefore, vigilance over serum concentration of immunosuppressants is advisable. If rejection is suspected, biopsy is advisable. If present, treatment with steroids is recommended.

Another concern is risk of hypertension during pregnancy. Safest anti hypertensives like methyldopa, labetalol, nifedipine and thiazide derivatives are advisable. For urgent BP control, parenteral hydralazine is advisable. There is also increased risk of superimposed PE. Diagnosis of PE is difficult as many patients have existing proteinuria and BP usually rises in latter half of pregnancy. Vigilance, tests for prediction of PE along with regular monitoring of pregnancy with laboratory tests needs to be done all throughout pregnancy. Other comorbidities like GDM, anemia needs to be considered and accordingly screened every trimester.

There is increased risk of infection due to usage of immunosuppressants. Prenatal screening needs to be carried out for urinary tract infection, viral infections like CMV, toxoplasmosis, hepatitis B / C, HIV, varicella and herpes simplex.Though most infants are delivered by C section, expert consensus is in favor of vaginal delivery despite presence of transplanted kidney in false pelvis,unless obstetrically contraindicated.

Fetal

There is high risk of preterm delivery and FGR. Risk of preterm delivery is almost 50 % and is due to fetal and maternal complications rather than spontaneous labor. There is also risk of PROM due to increased risk of infection, pyelonephritis and maybe rejection of graft. Mean gestational age at delivery is 34 weeks with low birth weight. It is recommended to give steroids after 28 weeks of gestation. Consequences of low birth weight leads to neurological, endocrine, cardiac and renal abnormalities.

The major concern is effect of immunosuppressants on organogenesis and development. All immunosuppressants pass through maternal and fetal circulation to a varying degree. Prednisolone and azathioprine are found to be at relatively low levels in placental circulationbut CNI (Cyclosporine) readily crosses placenta and enter fetal circulation. The effect may continue after birth during lactation. Most physicians advise against breast feeding though AAP (American Academy of Pediatrics) supports BF in those who are on prednisolone and not those on cyclosporine. There are no specific recommendations for those on azathioprine or tacrolimus though prednisolone and azathioprine are detected in small amounts in breast milk.BF is not seen as an absolutely contraindicated.

The impact of immunosuppressants on developing fetus is not very well known as many patients are on more than 1 agents. CNI – cyclosporine is known to target T cell development in fetal thymus. Increase in autoimmunity and neurocognitive deficits are likely to happen. Whether these changes are induced during pregnancy is not known, hence it is advisable to keep transplant registry to accumulate all cases to know outcome of transplant mothers and off springs.

Risk of pregnancy to female kidney donors
The American Society of Nephrology in 2006 pointed out an increased incidence of PE in post donation pregnancies. This observation invites more research as living donations are increasing with female donors constituting approximately 60 % of live donors.

Liver transplant recipients
Pregnancy in liver transplant recipient is possible but the clinician needs to counsel them regarding time of conception, risk of miscarriage, deterioration of mother's health and risk of birth defects.3 Liver plays an important role in fertility by sustaining metabolic / hormonal function and producing fetulin – B protein responsible for permeability of zona pellucida. During pregnancy, overall immune response decreases and hence does not have effect on graft (recipient).

Contraception counselling is strictly done following procedure for 1–2 years for complete post-operative healing, liver functions / menstrual cycles recovery and stable immune modulation to avoid side effects.4 Women with poor liver functions have irregular menstrual cycles or amenorrhoea and is difficult for them to conceive. Menstrual cycles usually recover within 1 year of Liver Transplant and have good chance of becoming pregnant.

Pregnancy can be advised in those who are on low dose immune suppressants with proper allograft function (stable levels of bilirubin/ ALT- alanine aminotransferase/ AST – aspartate aminotransferase) and no failure of other organs. Pre pregnancy investigations need to include X ray chest and CT abdomen.Anti HT need to be changed to alpha methyl dopa and oral hypoglycemic agents to insulin. If patient does conceive spontaneously, ART treatment can be suggested.

Multi-disciplinary approach, good dietary/ nutritional advice and regular visits throughout pregnancy is needed. Glucose homeostasis may be altered by immunosuppressants hence glucose monitoring is essential. Potassium levels needs to be monitored as transplant medication may cause hyperkalemia. Due to increased risk of osteoporosis, osteopenia and fractures, calcium and vitamin D supplementation is advisable.

Immunosuppressants like prednisolone (< 15 mg/day), AZA (< 2 mg/kg/day), CsA (Cyclosporine A) and Tac (Tarcolimus) can be used. AZA has shown to have auditory nerve agenesis in children hence immunosuppressants based on CsA, Tac and Prednisolone are advisable. Thrombocytopenia is of concern post Liver Transplant and if present during pregnancy, patient needs to be hospitalized, and treated after thorough investigations.

It is advisable to give antenatal steroids for fetal lung maturity. Increased incidence of PIH, FGR and preterm labor are noted. C section is indicated for obstetric reasons only. Breast feeding is recommended by American Academy of Pediatrics. PP monitoring of immunosuppressants drug Is necessary as it may vary due to GI function changes and reconstitution of maternal immune system. Hence, women of reproductive age group following a liver transplant should not be discouraged from pregnancy but should be counselled properly.

Conclusions

Pregnancy is common after solid organ transplantation, however guidelines for optimal counselling and management are limited. Concerns always linger for both mother and fetus because of possibility of complications and limited data on which to base treatment recommendations and offer advice. Patient should be thoroughly counselled regarding potential adverse fetal outcome and allograft function. Multidisciplinary approach in conjunction with transplant team is advisable.

References

1. Neha Deshpande, Lisa Coscia et al: Pregnancy after Solid Organ transplantation: A Guide or Obstetric Management: Reviews in Obstetrics & Gynecology: 2013, 6, 116 – 125
2. Dianne B Mckay and Michelle A Josephson: Pregnancy after Kidney Transplantation: Clinical Journal of American Society of Nephrologists: 2008March, 3 (suppl 2), 117 – 125
3. Kuljit S Parhar, Paul Gibson et al: Pregnancy following Liver transplantation: Review of outcomes and recommendations for management: Canadian Journal of Gastroenterology: 2012 Sept: 26 (9): 621 – 626
4. Zoulikha Jabiry-Zieniewicz, Filip Andrzej Dabrowaski et al: Pregnancy in Liver Transplant Recipient: AASLD – American Association for The Study of Liver Diseases: Review Article: 2016 May: https://doi.org/10.1002/lt.24483

ADNEXAL TORSION IN ADOLESCENTS
ACOG COMMITTEE OPINION NO 783

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Abstract

Adnexal torsion is the fifth most common gynaecological emergency. The most common ovarian pathologies found in adolescents with adnexal torsion are benign functional ovarian cysts and benign teratomas. Torsion of malignant ovarian masses in this population is rare.

In contrast to adnexal torsion in adults, adnexal torsion in paediatric and adolescent females involves an ovary without an associated mass or cyst in as many as 46% of cases. The most common clinical symptom of torsion is sudden-onset abdominal pain that is intermittent, nonradiating, and associated with nausea and vomiting.

If ovarian torsion is suspected, timely intervention with diagnostic laparoscopy is indicated to preserve ovarian function and future fertility. When evaluating adolescents with suspected adnexal torsion, an obstetrician–gynaecologist or other health care provider should bear in mind that there are no clinical or imaging criteria sufficient to confirm the preoperative diagnosis of adnexal torsion, and Doppler flow alone should not guide clinical decision making.

In 50% of cases, adnexal torsion is not found at laparoscopy; however, in most instances, alternative pathology is identified and treated. Adnexal torsion is a surgical diagnosis. A minimally invasive surgical approach is recommended with detorsion and preservation of the adnexal structures regardless of the appearance of the ovary.

A surgeon should not remove a torsed ovary unless oophorectomy is unavoidable, such as when a severely necrotic ovary falls apart. Although surgical steps may be similar to those taken when treating adult patients, there are technical adaptations and specific challenges when performing surgery in adolescents. A conscientious appreciation of the physiological, anatomical and surgical characteristics unique to this population is required.

Recommendations and conclusions

The American College of Obstetricians and Gynecologists makes the following recommendations and conclusions:

- Obstetrician–gynaecologists who treat mainly adults are commonly consulted to manage adnexal torsion in an adolescent. Although surgical steps may be similar to those taken when treating adult patients, there are technical adaptations and specific challenges when performing gynecologic surgery in adolescents.
- The most common clinical symptom of torsion is sudden-onset abdominal pain that is intermittent, nonradiating, and associated with nausea and vomiting.
- There are no clinical or imaging criteria sufficient to confirm the preoperative diagnosis of adnexal torsion.
- Doppler flow alone should not guide clinical decision making.
- Although more than one half of cases of paediatric and adolescent adnexal torsion occur in the setting of an adnexal mass, cancer in this age group rarely presents as adnexal torsion.

- If ovarian torsion is suspected, timely intervention with diagnostic laparoscopy is indicated to preserve ovarian function and future fertility.
- A minimally invasive surgical approach is recommended with detorsion and preservation of the adnexal structures regardless of the appearance of the ovary.
- A surgeon should not remove a torsed ovary unless oophorectomy is unavoidable, such as when a severely necrotic ovary falls apart.
- A cystectomy does not need to be performed at the time of detorsion because it may cause additional trauma. If a cystectomy is not performed, a surgeon may consider incision and drainage for large cysts. Ultrasonography to re-evaluate the cyst at 6–12 weeks is recommended.
- Adolescents are a unique population with specific needs; thus, special care for placement of ports and lower insufflation pressure may be indicated. Multispecialty collaboration is crucial to optimise care and ensure that minimally invasive detorsion with ovarian preservation is the standard treatment provided to adolescents with adnexal torsion.