Indian Society for Assisted Reproduction

SPECIAL INTEREST GROUP ULTRASOUND & FETAL MEDICINE

NEWSLETTER

Dr. Jaideep Malhotra
President, ISAR

Dear ISARians,

Greetings & Regards...!!

Year 2019 has been ISAR take bold steps towards Better Practices, Better Outcomes. Under this theme we have planned various SIG's, focused masterclasses, consensus meetings, guideline TOG's etc.

This SIG Ultrasound & Fetal Medicine SIG Newsletter comes to you covering topics of essentials of fetal medicine.

As an ART specialists, we need to have a clear understanding of fetal medicine & prenatal diagnosis. We hope this will clarify doubts and move towards Better Practices, Better Outcomes.

Happy Reading

Dear All,

It is a great honour and a big responsibility bestowed upon us by President ISAR Dr Jaideep Malhotra

Indeed our proud privilege to be part of the Special interest group on USG and Fetal medicine . All the members in this group are Fetal medicine specialist with some of us practicing ART as well . We welcome all the members to the SIG

Since we all know science is progressing leaps and bounds specially newer developments and researches have given hopes to couples who were turned back from ART clinics for eg Women with medical comorbidities . mullerian malformations (Uterine Transplant) has brought hope for them.

Now with good medical management of many life style diseases we are seeing increasing no of pregnancies in this subgroup of women

What we have to do with help of our members is to make general obstetricians aware that women achieving pregnancy with help, of ART treatment need special care and close vigilance for fetal growth and they need to be made aware of complications happen in this subset of pregnant population .

We are developing couple of modules and roll it out from September in different States with the help of state chapters of ISAR .

Our Goal is to address issues of special and specific monitoring needs of women conceiving with ART treatment and update our obstetrician colleagues for timely interventions and referrals so as reduce morbidity in mother and babies

Dr. Sonal Panchal
SIG, Chair

Dr. Archana Baser
SIG, Co-Chair

LIST OF SIG ISAR

SIG NAME	CHAIR	CO-CHAIR
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Third Party Reproduction	Dr. Nayana Patel	Dr. Jatin Shah

TEAM - FETAL MEDICINE

Dr. Archana Baser

Why Fetal Medicine Experts Needed at ART Centres

Fetal Medicine a subspeciality deals with well being of fetus in utero we are practicing in an era where women of all sizes ,at extremes of reproductive age and even post menopausal are coming seeking possibilities of conceiving . With advances in ART we are seeing miracles happening But we need to address issue of special care needed for these pregnancies Early pregnancy related problems, multifetal pregnancies, growth restrictions, pre eclmpsia , prematurity all need close surveillance for this a dedicated fetal medicine specialist is needed to help optimise antenatal care and guide right time for safe delivery

GOOD ULTRASOUND MACHINES IN INDIA

HOW TO CHOOSE AN USG MACHINE

Dr. Chinmayee Ratha

Choosing an appropriate ultrasound machine is very important in the field of Fetal medicine as most of the work on fetal evaluation revolves around “examination” of the fetus and “interventions” prenatally both of which require optimal visualisation of the fetus, placenta and other intra and extrauterine elements which will affect the course of the pregnancy or the procedure being conducted.

The following are some important points one must look into while choosing the correct equipment for antenatal scans:

· Machine should be capable of performing imaging applications in Obs/Gyne, Abdominal, Fetal Heart modes at least. System should have boroad band beam capable of processing suignals from 1-18 MHz

· **Optimal gray scale imaging**: The basic fetal images are done on 2D – gray scale and hence for obtaining good quality images are of paramount importance. The optimal frequency of Obstetric probes ranges from 2Mhz-9MHz (the greater the frequency – the lesser the penetration – so TVS probes have higher frequency than TAS probes) – most Obstetric probes are “curvilinear”. System should ideally have 256 shades of grey!

· An abdominal curvilear probe and an intracavitary probe are indispensable for any ObGyn set up . These probes can be 2D compatible or the “volume” probes depending on your infrastructure limits and that will allow multidimensional imaging.

· System should have dedicated package for Obstetric biometry so that accurate estimation of fetal weight and other growth parameters can be done in the clinic. It is desirable to have some growth and biometry charts also incorporated within the system which allows not only for a onetime assessment but also for serial fetal growth follow up.

· Scan depth of 2 to 30 cm or more should be available for optimal imaging of fetal tissues with facility for real time or frozen, pan or point zoom.

· Dynamic range of atleast 180db or more, high PRF are desirable with the ability to have a frame rate of 500 or more for specific areas.

· Cine loop review (8000-15000 frames) and Loop Review (7000-9000 Lines) is very useful in fetal imaging as important frames may change due to fetal movement Such review processes help in retrieving those frames offline

· The Monitor should be at least a 18-22” high resolution LCD/LED monitor with

articulating arms with resolution of upto 1280 X 1024 pixels. There should be a digital brightness & contrast adjustment with preferable three default settings (Dark Room, Semi Dark Room, Bright Room).

· A good ultrasound machine should have Advanced Image Processing algorithms to analyze between targets and artefacts so as to sharpen target anatomy, reduce the sparkle & artefacts to improve image quality

· The system should be able to move the control panel up/ Down and side ways, have lock for wheels

· Ability to store images and cine loops is vital for documentation and work efficiency.

· The ability to modify / edit patient data during and after exam has been completed helps in doing post processing and some academic/research/teaching activity

· While the above mentioned points are enough for general, baseline fetal imaging, in this day and age of technological advances, some novel features are part of many standard machines and can be acquired at some overhead costs. These include multidimensional imaging options like 3D/4D features like Multiple Volume Slicing, Selective Volume Slicing and simultaneous Orthogonal 3D Plane View, 4D fetal echo 2D+Colour Flow+ Power Doppler Mode+ Spatio Temporal image correlation+ multislice mode with cine movement, Volume quantification package for study of Fetal Central nervous system etc.

Choosing the right equipment will therefore require a basic awareness of the above mentioned technical points, knowledge of how much one is going to use each feature in one's own daily practice so that an optimal, individualised combination of features can be acquired to optimise costs. Apart from getting a good USG equipment some important logistic requirements must be followed for ensuring adequate performance and maintenance of the equipment.

· Onsite uninterrupted power supply (UPS) with voltage correction and maintenance free batteries of a reputed brand to support all functions of the equipment & accessories with at least 30 min backup is important to prevent loss of data and machine damage

· PCPNDT clearance before getting the machine installed so that adequate registration formalities are completed and your work charter is free of hassles.

HAPPY SCANNING!!!

Dr Neharika Malhotra Bora

MULTIDISCIPLINARY APPROACH FOR PRENATAL SCREENING AND DIAGNOSIS

The exhilaration at the thought of being a mother is more often than not plagued by the worries of the well being and normalcy of the fetus. “Is my baby doing alright?” is the most common question fired at any obstetrician. In spite of the extensive line up of investigations available, there are always asterisk* signs saying that 'all risks cannot be ruled out'. Apart from the most frequently occurring fetal aneuploidies like trisomies 21, 18, and 13 there are many more structural defects that can be detected by prenatal screening. Various Congenital cardiac anomalies, abnormalities of the chest and gastrointestinal tract, urinary tract abnormalities, anomalies of the central nervous system, externally visible body defects and skeletal abnormalities can be detected by antenatal ultrasonography. The diagnosis of these anomalies is essential not only to detect the fetuses that are not viable but more importantly identify the ones that need extra support for viability. Under such circumstances having a multidisciplinary approach that involves adequate counseling and active involvement of the parents in their baby's care is the only way forward.

VARIOUS MEMBERS ON TEAM

SCREENING & DIAGNOSIS	MANAGEMENT(FETAL THERAPY)	POST NATAL SUPPORT
General Counsellors	Fetal Medicine specialist	Social Workers
Genetic Counsellors	Fetal Surgeon	NGO
Pediatric Surgeon		
Perinatologist		
Neonatologist		

1) PRENATAL SCREENING COUNSELOR

Prenatal screening shouldn't be advised as a part of routine antenatal investigation as the results of the test can potentially change the course of pregnancy. It is important for health care professionals to discuss the screening tests with all pregnant women. Information pamphlets, in their native language, can also be helpful in explaining the purpose and limitations of screening tests. The decision for screening is entirely voluntary and should be documented.

TIPS FOR PRE-SCREENING COUNSELLING

Counsel your patient that all pregnant women have some risk of having a fetus affected by trisomy 21, 18, or 13 or other structural defects.

Explain that prenatal screening will use specific maternal and pregnancy factors (e.g., age, ethnicity) to assess her individual risk of having an affected fetus with maternal age being an important effecter for risk.

Emphasize that a positive screen will mean that her risk is above a pre-determined cutoff (set by regional programs), not that her fetus is necessarily affected. Distinguish clearly between a screening test and a diagnostic test.

Give simple examples while explaining the specific and personalized risk. For example, a risk of 1:100 means that for one woman carrying an affected fetus, there are 99 women carrying a fetus that is not affected.

Discuss options and the invasive prenatal testing that may need to be considered after screening.

Screen Negative: Explain that if screening is negative, no further testing is indicated other than routine second trimester ultrasound screening but does not guarantee the birth of a healthy baby.

Screen Positive : Inform your patient that if the screening test is positive she is eligible for diagnostic testing.

Diagnostic testing: Ensure your patient is aware that diagnostic testing is entirely voluntary. This testing would be done by amniocentesis in 2nd trimester or late

1st trimester, which carries a procedural risk of 1/100 to 1/175 for loss of the pregnancy or by chorionic villus sampling, in early 1st trimester which carries a procedural risk of 1/100 for loss of the pregnancy.

Decide for or against termination: Ensure your patient knows that she has the option of continuing or terminating the pregnancy if the test shows that her fetus has an aneuploidy or another significant chromosomal anomaly. It is a common misconception that screening is offered only to patients who would terminate a pregnancy if an anomaly were found. It is important to tell patients who may choose to continue the pregnancy that their fetus will be given the best care possible.

In the case of chromosomal anomalies that have an extremely poor prognosis, this may include referring the patient to a neonatologist to discuss palliative

SOGC COMMITTEE OPINION Counselling Considerations for Prenatal Genetic Screening Lola Cartier, MSc, CCGC et al No. 277, May 2012

2) GENETIC COUNSELLORS:

Genetic counselors work as part of a health care team, providing information and support to families affected by or at risk of a genetic disorder. They help to identify families at possible risk of a genetic disorder, gather and analyze family history and inheritance patterns, calculate risks of recurrence, and provide information about genetic testing and related procedures.

Genetic counselors also provide supportive counseling services, serve as patient advocates, and refer individuals and families to other health professionals and community or state support services. They serve as a central resource of information about genetic disorders for other health care professionals, patients, and the general public.

The most common indications for genetic counseling include advanced maternal age, family history of a genetic condition, and suspected diagnosis of a genetic condition.

The post-test session involves more than the provision of medical information

and often focuses on helping families cope with the emotional, psychological, medical, social, and economic consequences of the test results. In particular, psychological issues such as denial, anxiety, anger, grief, guilt, or blame are addressed and, when necessary, referrals for in-depth counseling are offered. Information about community resources and support groups are provided to the patient/family.
If the genetic test is positive, testing should be considered in additional relatives of this individual.
At the conclusion of the genetic counseling sessions, the patient should be offered a written summary of the major topics discussed. The summary is often provided in the form of a letter which serves as a permanent record of the relevant information discussed, as well as relaying additional information that may have become available after the final counseling session.
Understanding Genetics: A District of Columbia Guide for Patients and Health Professionals.

FETAL THERAPY:
Fetal therapy was introduced as early as 1952 by Brevis as amniocentesis for management of rhesus isoimmunization and is currently a very well established field.

DEFINITION: A therapeutic intervention for the purpose of correcting or treating a fetal
anomaly or condition. In almost every case, the fetus is at risk of intrauterine death from
the abnormality. Advances in fetal therapy have enabled us to prevent and treat potentially life threatening conditions and improve outcome.

3) FETAL MEDICINE PHYSICIAN:

Fetal medicine specialists use ultrasound, blood tests, and procedures such as fetoscopy to evaluate the developing fetus.

They perform diagnostic procedures like chorionic villous sampling, amniocentesis and fetal blood sampling as well as therapeutic interventions like laser ablation of AV anastomosis in twin to twin transfusion syndrome, twin reversed arterial perfusion syndrome or selective fetal reduction of the anomalous twin.

Tracheal occlusion in fetuses with congenital diaphragmatic hernia, aims at blocking the outlet of the lung-fluid, which accumulates within the lungs increasing the transpulmonary pressure, promoting lung growth. Percutaneous fetal endoscopic balloon tracheal occlusion (FETO) is being evaluated for the same. Fetuses with tracheal occlusion must be delivered by EXIT procedure (partial delivery of the fetus, removal of the tracheal occlusion, administration of surfactant and institution of assisted ventilation while the infant is still on placental support).

In very severe cases of Erythroblastosis Fetalis fetal intrauterine transfusion can be performed to treat the hemolytic anemia. A Paediatric Hematlogist can be involved in decision making

4) FETAL SURGEON

Rare fetal tumors like congenital cystic adenomatoid malformation of the lung (CCAM) and sacrococcygeal teratoma (SCT) cause almost 100% fetal mortality when associated with hydrops fetalis. These tumors cause hydrops by either venous obstruction due to mediastinal shift (CCAM) or high output heart failure (SCT). Operative removal of these tumors has resulted in survival of ~50% of the affected fetuses.

Intrauterine repair of myelomeningocele decreases the incidence of hindbrain herniation and shunt-dependent hydrocephalus in infants with spina bifida, but increases the incidence of premature delivery.(Management of Myelomeningocele Study (MOMS))

Fetal Surgery for Myelomeningocele and the Incidence of Shunt-Dependent Hydrocephalus Joseph P. Bruner,et al November 17, 1999 The Journal of American Medical association

Aspiration of Fetal Ovarian Cysts larger than 30mm to Prevent Torsion and avoid neonatal surgery is being evaluated in France.

5) PEDIATRIC SURGEON

Diaphragmatic Hernia

· The outlook for babies born with CDH is increasingly positive with new surgical techniques and ways to support babies as they heal. Surgery is performed after delivery as soon as the lungs can maintain good blood flow through the vessels prior to the operation.

Duodenal Atresia

· : Duodenal atresia is often characterized by a “double bubble” on prenatal ultrasound. One bubble represents air in the stomach and the other bubble represents the first part of the duodenum, with no air past that. urgery is required to treat duodenal atresia, usually within the first few days of life.

Esophageal Atresia

· VACTERL association because of the possible involvement ofVertebral column, Anorectal, Cardiac, Tracheal, Esophageal, Renal (kidney), and Limbs require early management of neonate for better prognosis.

· Management of non fatal cosmetic conditions like cleft lip, cleft palate, congenital tallipes should be discussed clearly as soon as the diagnosis is made.

6) PERINATOLOGIST AND NEONATOLOGIST

In cases where antenatal screening has not been done or has not picked an anomaly, pediatricians often face the responsibility of revealing the diagnosis to the parents and dealing with the emotional overture. They also have to deal with complications in the neonatal period (IUGR, congenital anomalies) and various comorbidities (hypothyroidism, recurrent otitis media, atlanato-axial instability, transient myeloproliferative disorders).The perinatologist should be involved in

the decision making of mode of delivery for anomalous fetuses along with the couple.

7) SOCIAL WORKERS & SUPPORT GROUPS

Despite the best efforts and elaborate investigations 1 in 1000 live births result in a Downs baby. For a couple waiting to hold their newborn close, the idea of an 'abnormal' fetus is always shattering. Lack of knowledge on the routine management and anticipated medical problems only compounds the emotional turmoil. Thankfully there are a lot of Downs syndrome support groups both nationally and internationally helping many Downs babies lead a life as close to normalcy as possible. A case report of a 25 years old married Downs lady delivering a healthy term baby only emphasizes the importance of familial and social support.

International Journal of Infertility and fetal medicine vol 1 No 1 2010 Baxi et al

8) YES I CAN!!!

Since 2012, donation possibilities for babies, specifically babies with anencephaly, have expanded and currently there are more potential for donation than ever before. Although each particular case is unique, and each potential donation has various criteria that must be met, donation is a very viable option for a baby with anencephaly if families wish to pursue this option. Donation can be used either for transplant or research.

The recent story of Teddy, the anenchephlic twin, donating kidney and heart valves to an adult suffering from renal failure is no less than a heroic act.

Currently India doesn't have any legislation over organ donation in anenchephlous fetuses. With an extremely poor national organ donation rate of 0.26 per million population, it is indeed essential to tap into the possibility of organ donation from anomalous fetuses.

Where do you, as an Obstetrician, stand in all this?

Just like the conductor of a symphony orchestra unifies the performers and

executes clear preparations to shape the sound of the ensemble, the obstetrician plays the key role of coordinating all the events in prenatal screening, diagnosis and management and bringing out the entire team as one unit.

CONCLUSION

A multidisciplinary yet integrated approach for Prenatal screening and diagnosis with expert counseling and close follow-up after delivery for appropriate medical support not only improves the chance of healthy viable fetus but also decreases the anxiety levels for the parents.

QUIZ

Q1. Which is the best time to date a pregnancy based on fetal biometry?

a. 6weeks b. 12 weeks c. 16 weeks d. 36 weeks

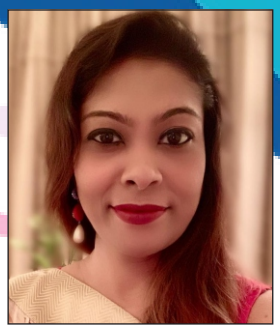
Q2. Umbilical vein carries blood?

a. From the fetus to the placenta
b. From the placenta to the fetus
c. From the ductus venosus to the IVC
d. From the hepatic vein to the DV

Q3. Which test is most suitable to detect balanced translocation?

a. QFP-CR b. Microarray c. Karyotype d. FISH

Please email your answers to:
dr.neharika@gmail.com



Dr Selvapriya Saravanan

ROLE OF FETAL MEDICINE AND REPRODUCTIVE MEDICINE IN MODERN OBSTETRICS

"Hearing the unborn fetus" .

Predicting preventing and properly following up the ailments of an Unborn fetus has revolutionised the modern obstetrics practise.Focussing on managing the health concerns of the mother and fetus elaborately prior to, during and shortly after pregnancy has truly been successful in BRIDGING the GAP between the doctor, mother and the fetus.

The maternal fetal medicine specialists are trained to manage high risk pregnancies obstetric complications , identifying and predicting fetal ailments and thereby enhancing the outcome of pregnancy .

Ultrasound has become the third eye of an obstetrician . It is now also a concern that an obstetrician should have adequate training with this tool so that the best outcome can be guaranteed . The delicate line of overlap of the radiologists and obstetricians must be utilised to the full potential to ensure benefit to patients .

When comparing a radiologist and an obstetrician (where imaging is just a minor part of curriculam) It has to be accepted that radiologists can give more details about the state of fetus inside . But the obstetrician has to be the one to clinically correlate the findings to the management options . The decisions are based on the finding . So it clearly becomes very important for the obstetrician to become confident and skilled with knowledge about imaging if he or she truly wants to bridge the gap between them and the mother and fetus. In my opinion

(1) Either get competent with knowing the fetus with adequate training

(2) Or stick to your area of comfort and completely rely on the specialists for the management of fetus.

What I would personally say is "Be the master of your area "and never hesitate to

pull in a team whenever appropriate. After all the goal is to provide the best of our services to the mother and unborn fetus .

Fetal medicine specialists are the ones who have an extra sensitive role of dealing with the problematic babies in many instances. Prenatal screening has revolutionised current practise by being able to find many genetic abnormalities prior to birth of a child. The goal in not to identify and remove the abnormal babies . Every life created has the rights to step into this world . At the Same time every parent has the right to dream of having a healthy baby and perfect life . So the job in not only to identify the issue but also to provide supportive solutions for all the correctable issues.Meticulous counselling ,constant follow up, dealing with the unpredictable outcomes all make the job of fetal medicine specialists extra sensitive.

So working in hormony with fetal medicine specialists relieves the stress of an obstetrician and also involves team work where patients are dealt with experts and thereby more quality health care in provided .

Spring fertility Fetocare and Fetogene is the first of its kind speciality centre of Kanyakumari district where there is one stop solution for childless couple and high risk pregnancy and prenatal care . We not only identify the problem but also give you the solution for it .

Birth may be a matter of a moment ,but every birth in a UNIQUE ONE . We need to ensure that we make it unique for each and every patient who turn to us with HOPE !!!!.

What is QF-PCR?

Dr. Neharika Malhotra Bora

From the desk of Editor

Dear Friends,

Wishing you a very Happy Independence Day & Happy Rakshabandhan

Our SIG is proud to present its first E-Newsletter with you all.

Fetal medicine is an important part of any infertility clinic and we must understand it's need and incorporate it in our practise .

Any good fertility clinic must have a multi disciplinary approach to Infertility and Art pregnancies involving all aspects from counseling, embryologist, technology, fetal medicine and an overall holistic approach.

We hope you enjoy reading this newsletter and looking forward to the feedback's .

"True Teams are made when you put aside individual wants for collective good."

ART Pregnancies Are they Different ?

ISAR Masterclass

Date: 21-22 December
INDORE

Target Audience

Obstetricians & Infertility Practitioners

Conference Organizers

Organizing Chairpersons
Dr. Jaideep Malhotra
Dr. Asha Baxi

Organizing Secretaries
Dr. Archana Baser
Dr. Mangala Kawade

Joint Organizing Secretaries
Dr. Monica Singh
Dr. Gajendra Tomar

Conference Highlights

- Are IVF Pregnancies High Risk Pregnancies?
- Incidence of Maternal Morbidities in ART Conceptions
- Approach to ART Pregnancies: Focus on Nutrition
- Common Complications
- But what about the baby? Fetal Origin of Adult Diseases

As a result of advances in technology and provision of services, an increasing number of infants are born as a result of Assisted Reproductive Technology (ART) Therapy. In developed countries, ART pregnancies represent 1.7% to 4.0% of all births. A ***"good perinatal outcome"*** among live births after ART is defined as the live birth of a singleton infant born at term ($\geq$ 37 Completed weeks of gestation) and at a normal birth weight (of $\geq$ 2500 g). However, concern is mounting over the safety of ART and it's effect on maternal and fetal wellbeing. It is well documented that ART pregnancies have a significantly higher risk of multiple pregnancy and adverse perinatal outcomes, including preterm delivery, low birth weight and birth defects. Some studies have suggested an increased risk of preeclampsia, gestational hypertension, placenta previa and gestational diabetes in ART pregnancies.

IS PROLONGED SPERM INCUBATION REQUIRED FOR TESA

JOSEPHINE ILUOBEALLI, *Dr Jaideep Malhotra, Dr Narendra Malhotra, Dr Neharika Malhotra, Dr Keshav Malhotra Dr Shally Gupta, Dr Neerja Sachdev, Dr Charles Uhioh, Ms Sapna Gandhi, Mr Chand Mohamad, Ms Naintara Lucien,*

INTRODUCTION

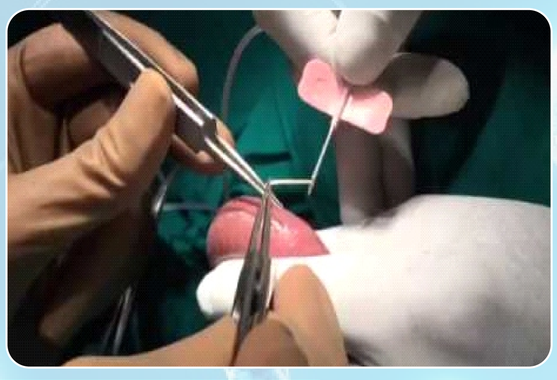
- The advent of in-vitro fertilization with intracytoplasmic sperm injection (ICSI) has revolutionized the treatment of couples with male factor infertility.
- For obstructive azoospermia patients in whom sperm cannot be found in the epididymis, it is always possible to find sperm in the testis & TESA may be performed as a primary harvesting technique. Sperm can usually be easily obtained from infertile men with obstructive azoospermia for intracytoplasmic injection.
- These sperms however lack motility & it is quite difficult for the embryologist to select the most viable sperm for injection.

OBJECTIVE

At our centre we analysed our results with TESA ICSI . Who had a maximum sperm incubation period of 4 hours. We analysed the sperm motility after incubation, fertilization & clinical pregnancy rates.

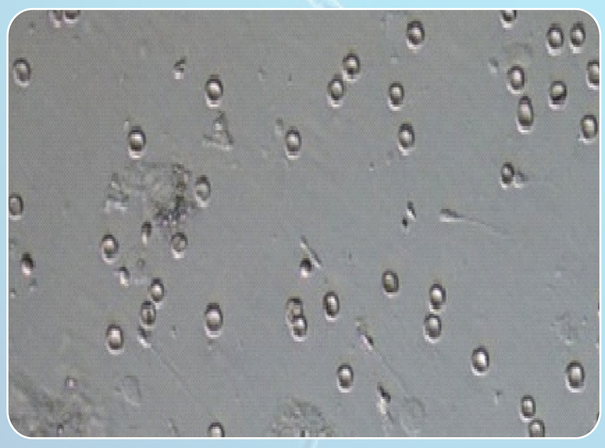
METHODOLOGY

- A retrospective analysis of patients who underwent fresh TESA-ICSI cycles for obstructive azoospermia from June 2018 to June 2019 in Rainbow IVF Centre Agra.
- Fresh Testicular Sperm Aspiration(Fresh TESA) was performed on the same day 2 hours prior to OPU & the sperms were incubated in fertilization media for a maximum period of 4 hours. Motility, Fertilization, cleavage and pregnancy outcomes were analysed.



RESULT

- A total of 54.8% (182/332) sperms which were selected for sperm injection exhibited signs of motility that ranged from twitching to progressive motile sperms.
- A fertilization rate of 76.08%(255/332) was observed, a cleavage rate of 96.8%(247/255).
- Total 40% (12/30) achieved a clinical pregnancy & 55.5% (10/18) achieved a pregnancy in a subsequent FET cycle.



DISCUSSION

- There are many ways of improving results with TESA samples. some of them include using hypoosmotic swelling test or motility enhancers like pentoxyphylline.
- The safety & efficacy of these techniques are still under observation.
- Another method of improving sperm selection in TESA samples is inducing sperm maturation by incubating these prepared samples.
- Some groups performed the surgical procedure one day prior to the oocyte retrieval in order to allow maturation of sperm with the goal to gain motility. They observed improvement of the motility during in-vitro culture, mainly in patients with OA, culture for more than 48 h seemed to cause sperm ageing, determined by increased DNA fragmentation
- In our study, we found out that even with 4 hours of incubation, a decent motility percentage can be achieved without compromising on the sperm aging & DNA content.

CONCLUSION

- The use of ICSI with surgically retrieved sperm has moved frontiers in the fertility treatment of the azoospermic man.
- Patients with NOA have lower sperm recovery rates and lower delivery rates than OA patients.
- Sperm incubation seems to give us decent motility rate in such patients & can be used as a good option for such patients.

ART Rainbow IVF .....creating smiles

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