Editorial

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IVF Pregnancy: Preventive Aspects for Improving Outcome

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Indications and use of IVF in achieving pregnancy is increasing enormously hence prevelence of pregnancies after IVF is also increasing significantly. Although most of the time IVF pregnancy outcome is similar to spontaneously conceived pregnancy and result in healthy offspring but there is always concern of maternal and fetal outcome.

Most of the risks are directly or indirectly related to increased incidence of multiple pregnancies after IVF. Although even singleton pregnancy after IVF may have slightly higher risks compared to spontaneous conception. Technology of IVF procedure, interventions included in vitro handling, no of embryo transfer, fresh vs frozen or donor state, ICSI, Embryo biopsy, Pre-implantation genetic diagnosis (PGD), etc are modifiable factors to some extent whereas advanced age, infertility linked health issues are the unmodifable factors.

Fresh vs frozen embryo transfer: in frozen embryo transfer suitable embryos are made frozen for transfer , endometrium preparation is natural, more natural placentation hence pregnancy outcome is expected better with less risk of preterm labour and thre is decreased risks of ovarian stimulation too. But there is 50% increased risk of hypertension during pregnancy in frozen cycles. Thus depending on patient scenario we can select the type of embryo.

No of Embryos transferred: Improvement of IVF pregnancy outcome largely depends on ratio of singleton pregnancies. Rate of multiple gestation can be reduced by limiting the no of embryos transfer based upon age, embryo quality, cryopreservation of good quality embryos. Elective single embryo transfer (SET) is a good option .SET vs DET (double embryo transfer) have shown similar birth rates 40% vs 42% but less multiple pregnancy rates are 2% vs 15%.

Morphology criterias of embyo calculated by division time, cell numbers, fragmentation and symmetry of embryo may help in selection of best embryo to transfer to get higher pregnancy rates better outcome despite single embryo transfer. Non invasive biomarker by assay of culture media are under trial but have not been proven yet for embryo selection.

Aneuploidy screening There is possibility of false positive aneuploidy screening in IVF pregnancies as low PAPP and high hCG levels are observed in these pregnancies. Lower fetal fraction of cfDNA has also been reported hence potential risk of false +ive aneuploidy screening in NIPT is also a possibility. Patients should be councelled well regarding this. Screening and testing should be offered to all even after PGD.

Chromosoal abnormalities increased risk of chromosomal abnormalities may be attributed to IVF procedure and characteristics of patient, which includes age, PCOS, infertility profile, decreased ovarian reserve. ICSI has been reported with increased rate of denovo chromosomal anomalies, specially related to semen parameters .I personally prefer that conditions like PCOS should be treated before by insulin sensitizer to improve ovarian metabolism. ICSI should be offered only when necessary.

Medical interventions: Editor has observed intervention by all possible medications after IVF conception for the purpose of maintaining such pregnancy. Patient are sometimes receiving three routes and three types of progesterones along with other medications like oestrogen, aspirin, heparin metformin, IVIG, alamine. Such practices may

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likely lead to adverse pregnancy outcomes like congenital malformation, preterm labour, long term neurodevelopmental problems. This is my observation that long term multiple progesterone administration is effecting offspring behavioural and neurodevelopement health after all these are steroidal hormones. This needs future research. These practices of over prescription of medication during pregnancy after IVF conception should be avoided.

Ivf should be offered selectively only when indicated. Caution should be taken during IVF procedures. Medical interventions should be done judiciouly

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