Editorial

From the Editor’s Desk

Hope all our readers are well and healthy during the COVID 19 pandemic, which has had a great impact on fertility therapy which was not regarded as an essential medical service in most countries. Most countries had modified their policies regarding fertility treatment by legal or professional society mandate. However, we must remember that fertility treatment is time-sensitive and severe acute respiratory syndrome CoV-2 will be with us for the foreseeable future. Since July most assisted reproductive technique (ART) clinics in India have slowly opened up, but it may not be possible to offer all patients access to care immediately upon resumption. We should prioritize patient care based on the impact of delay on patient prognosis due to medical factors, such as age, ovarian reserve or endometriosis. We also need to take into account the impact of treatment delay on the mental and emotional well-being of patients. Implementation of proactive risk assessment within ART practices before restarting services was done in all clinics. Most clinics in India have developed clear and modified plans to ensure the ability to provide care while maximizing the safety of their patients and staff. The pandemic has also delayed our issue.

The review article on the use of mobile phones in males looks at its effect on fertility. There have been escalating concerns about the adverse effects of cell phones on human health and male reproductive system. Radiofrequency electromagnetic waves from mobile phones have negative effects on sperm parameters, especially in those with prolonged usage. The effect is seen on sperm count, motility, viability and morphology, results in the destruction of Leydig cell and testicular apoptosis impairing male fertility.

Autologous activated platelet-rich plasma (PRP) and cell therapy using autologous CD133+ bone marrow-derived stem cell (BMDSC) may offer a safe and efficient therapeutic approach for patients with refractory Asherman’s syndrome, thin endometrium, primary ovarian insufficiency, poor ovarian reserve wishing to conceive. The potential mechanism proposed for the use of mesenchymal stem cells in treating ovarian dysfunction and endometrial disorder is by promoting angiogenesis and by differentiating into functional cells. Vascular endothelial growth factor, hepatocyte growth factor, leukemia inhibitory factor, transforming growth factor, B-cell lymphoma 2, and matrix metalloproteinase are mainly involved. In this issue, we have a pilot study on the use of both autologous BMDSC and PRP in women in poor responders. Intraovarian instillation of stem cells in this study was done laparoscopically or transvaginally ultrasound guided. The authors documented a statistically significant increase in the antral follicle count but not in AMH values. Use of BMDSC and PRP in poor responders has a great potential for treating female infertility. Being autologous, they are only easily obtained, and also avoid graft rejection after transplantation.

We have another original study which looked at premature luteinizing hormone surges in gonadotropin-releasing hormone antagonist cycles in in-vitro fertilization (IVF). This study concluded that women with diminished ovarian reserve (DOR) and advanced age had an increased risk of premature LH surge with ovulation and cancellation of the cycle in an GnRH antagonist cycle. GnRH antagonist therapy does not produce a flare effect and rapidly suppresses gonadotropins and can be initiated in the late follicular phase of the menstrual cycle. They are supposed to be beneficial for poor responders since there is less suppression in the early follicular phase and are associated with decreased cycle cancellation and fewer days of gonadotropin stimulation, though there was no difference in the clinical pregnancy outcomes between GnRH antagonist and agonist protocols. The incidence of premature LH surge varies from 0.5% to 8% in a GnRH antagonist cycle in women with a normal ovarian reserve. The risk is much higher in women with DOR, who have a small number of primordial follicle pools and follicle-stimulating hormone (FSH)-sensitive follicles. As the FSH is high in the inter-menstrual period, in this group of patients, the primordial follicles start growing early in the cycle and also biologically mature quickly and are prone to premature luteinization. This makes it difficult to control the premature LH surges in poor responders when GnRH antagonist are used.

Vignarajan CP et al. looked at the effect of administering FSH on the day of human chorionic gonadotropin trigger (hCG) on ART outcomes in patients undergoing IVF-embryo transfer. Normally the gonadotropins are not given on the day of trigger, though GnRH analogues are administered. This study concluded that FSH administration on the day of the hCG trigger may be considered to improve the oocyte recovery and maturity if the patient is not at increased risk of ovarian hyperstimulation and serum estradiol on the day of the trigger is <4500 pg/ml. This increase in the total number of oocytes retrieved and the number of mature oocytes did not convert to increased implantation, clinical pregnancy, and live birth rates.
Deepa Talreja compared the outcome of intracytoplasmic sperm injection (ICSI) in obstructive and nonobstructive azoospermic patients using different sperm retrieval techniques. They had a lower sperm retrieval rate (SRR) and ICSI outcome in men with nonobstructive azoospermia (NOA) as compared to obstructive azoospermia (OA). A systematic approach, especially in patients with NOA is important to obtain sperms in these men. Percutaneous epididymal sperm aspiration and testicular sperm extraction (TESE) have a good SRR in OA. Microdissection TESE (micro-TESE) or single seminiferous tubule (SST) mapping is beneficial in NOA patients in order to increase the chances of successful sperm retrieval. Patients with NOA have a lower SRR and also a lower fertilization rate, embryo formation rate, and clinical pregnancy rate after ICSI. In NOA needle aspiration biopsy (NAB) may not be very effective to retrieve sperms. Conventional TESE is twice more likely to retrieve sperm than NAB. Micro-TESE is a good method for men with Sertoli cell-only syndrome. Micro-TESE was 1.5-times more likely to find sperm as compared to conventional TESE but required special expertise, the right equipment and a proper setup of the fertility clinic and can be traumatic for the testis. SST mapping allows for extensive sampling of the testis in the least traumatic manner. It is important to remember that the first attempt at sperm retrieval is the best chance the patient has for a good SRR with the least morbidity.

The incidence of reproductive failure in the form of infertility, implantation failure and pregnancy loss has increased considerably. One of the cause for this reproductive failure is chromosomal abnormalities and its variations. Leena Rawal et al. reported an incidence of chromosomal anomalies and polymorphic variations in 10.8% in individuals with reproductive failure. The most common variants observed in the study were pericentric inversion of the chromosome 9 followed by the presence of satellite sequences on the short arm chromosome 15 and Robertsonian translocation of chromosomes 13 and 14. This makes in mandatory to subject these couples with infertility, reproductive failures and pregnancy losses to cytogenetic analysis followed by genetic counselling before IVF treatment to rule out the carrier status. Moreover, recent research has shown that heterochromatin may have more important cellular roles than previously thought. Therefore chromosome variants should not be ignored by cytogeneticists and clinicians, and should be re-evaluated and recorded as all polymorphic variants may not be “normal.”

There is another paper from Iran, which looked at the cytogenetic analysis of 570 couples with recurrent pregnancy loss. This study reported an incidence of chromosomal abnormalities in 11.5% of women with recurrent pregnancy loss. Of these, 1.5% had structural aberrations and 9.6% had normal polymorphic variation. Reciprocal balanced translocations were more frequent than Robertsonian translocations. They reported a very low incidence of numerical chromosomal aberrations.

Most parent perspectives of childhood development after ART are not different from those who have spontaneously conceived. This could be because of their greater desire for pregnancy during ART. Moreover, these women have a different perspective as they have had a child after a long time of trying spontaneously and having undergone a lot of physical and psychological stress during the treatment of ART. Though most studies have shown that ART does not have a negative effect on the physical and mental development of children when compared to naturally conceived offspring. However, there is some evidence regarding the effect of ART on childhood developmental milestones, which probably may be due to increases the risk of prematurity and low birth weight, seen in ART pregnancies. Both of which are associated with developmental delay normally. A National Survey from the USA looked at this issue and concluded that most parents if counselled adequately before ART did not report any difference in the perspective of childhood developmental milestones reached and at an appropriate age.

We also have in this issue four interesting case reports. These include Complex Mullerian malformation: A rare case of the hypoplastic noncavitated uterus in the middle with two rudimentary horns on either side, accessory fallopian tube in an adolescent: A rare anomaly, Hemoptyosis: A rare presentation of mixed gonadal dysgenesis and a successful case for deselection of albino embryo and live birth of Albinism-Free Healthy Baby Followed by PGT-M.

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