

Return of Fertility Services in COVID-19 Times: Experience in a Tertiary Care Centre

Taneja Ashima¹, Monika Narang², Raina Suhasini³, Aggarwal Ritika⁴, Kaur Gagan⁵, Chaudhary Muskan⁶, Kaur Mehtab⁷, Deep Anupriya⁸, Singh Robin⁹

¹Head of Department, Department of Obstetrics and Gynecology, Dayanand Medical College & Hospital, Ludhiana, Punjab, India

²IVF Consultant, Department of Obstetrics and Gynecology, Dayanand Medical College & Hospital, Ludhiana, Punjab, India

³Senior Resident, Department of Obstetrics and Gynecology, Dayanand Medical College & Hospital, Ludhiana, Punjab, India

⁴Senior Resident, Department of Obstetrics and Gynecology, Dayanand Medical College & Hospital, Ludhiana, Punjab, India

⁵Senior Resident, Department of Obstetrics and Gynecology, Dayanand Medical College & Hospital, Ludhiana, Punjab, India

⁶Senior Resident, Department of Obstetrics and Gynecology, Dayanand Medical College & Hospital, Ludhiana, Punjab, India

⁷Junior Resident, Department of Obstetrics and Gynecology, Dayanand Medical College & Hospital, Ludhiana, Punjab, India

⁸Junior Resident, Department of Obstetrics and Gynecology, Dayanand Medical College & Hospital, Ludhiana, Punjab, India

⁹Medical Intern, Department of Obstetrics and Gynecology, Dayanand Medical College & Hospital, Ludhiana, Punjab, India

1. Introduction

Recently, governments around the world announced the most far-reaching restrictions of personal freedom in modern history due to COVID-19. The remarkable increase in COVID-19 cases raises the prospect of massive hospitalizations that no healthcare system in the world can manage.

In the early stages of pandemic, it was recommended to stop all non-emergency services (including fertility clinics) so as to prepare our health care systems to deal with the surge in corona virus cases. With a solid consensus, the key recommendations for fertility practitioners included suspension of new fertility treatments –ovulation induction, intrauterine insemination (IUI), and in vitro fertilization (IVF) – as well as non-urgent gamete cryopreservation. [1, 2]. India is also seeing complete lockdown since March 2020.

As the time has passed and it became more evident that this disease is here to stay, it was decided to resume the non emergency health services like fertility clinics in our country. This requires various policies that needed to be made. The purpose of this article is to highlight the various strategies that are followed in our institute while we resume fertility services during this pandemic.

Pandemic facts

Globally as of September 2020 there were 26 million confirmed cases of COVID-19 worldwide according to WHO. The global COVID-19 deaths represent approximately 1.0% of total deaths expected to occur worldwide over the first 3 months of the current year, with a wide variation in the reported death rates per country [3]. At present India stands as third most affected country after U.S and Brazil with about 3.94 million active cases (in first week of September).

By contrast, the death rate among people at reproductive age is 0.2%, with an estimated 1.5:1 male to female ratio, mainly affecting those with pre-existing conditions, including cardiovascular disease, diabetes, chronic respiratory disease, obesity, hypertension, and cancer [3]

Effect on ART services due to pandemic

For the period after COVID-19 was declared a pandemic ASRM recommended that fertility clinics to pause treatment as they waited for more data about virus, including its effect on pregnant females and new born babies. Conservative estimates indicate that over 1.5 million IVF cycles are carried out every year worldwide, resulting in approximately 400,000 babies born [5]. Globally, ART babies represent about 0.3% of the total live birth rate every year [5, 8]. In India approximately 30 lakh couples conceive using ART.

Need to restart ART with Indian perspective

Infertility is a disease and needs proper treatment. Reproductive care is essential for the psycho-social well being of the patients, families and societies in general.

As the infertility treatment outcomes are age dependant there is a short window of time in many patients which should not be lost in waiting for better times. Also patients undergoing oncology treatments and who are to be given gametotoxic drugs need urgent attention for preserving their gametes (both Oocytes and sperms).

Similarly patients of autoimmune disorders like Systemic lupus erythematosus and other hematological disorders who need to undergo gonadotoxic treatment require urgent procedures for fertility preservation.

2. Methodology

SOPs adopted to restart fertility services in our centre

- 1) All the frontline workers are given personal protective equipment which includes disposable caps, eye protection, N-95 face masks, gloves, shoe covers and disposable lab coats. All healthcare workers posted in fertility unit have been instructed to maintain social distancing and personal hygiene norms both on duty and off duty.
- 2) The European Society of Human Reproduction and Embryology (ESHRE) has issued an ART Triage questionnaire, that is to be filled by all persons entering the ART unit, including staff (ESHRE, Covid-19 working group, 2020). All the potential infectious cases are sent for Covid-19 PCR testing.

- 3) Whole of unit area including patient waiting area, consultation room, ultrasound room and ultrasound machine is being thoroughly sanitized with appropriate detergents and sodium hypochlorite solution.
- 4) Disinfection of Andrology lab floor and wall cleaning is done with 7X solution (GMP Compliant) and Laminar flow hood cleaning is done with 70% alcohol.
- 5) Daily cleaning of IVF lab laminar hood is done by a special solution –Fermicidal D2 (Bactericidal, Fungicidal and partial viricidal solution). The walls and floor of IVF lab are cleaned daily with 7X solution.
- 6) For Counselling infertility patients face to face visits have been curtailed and tele counselling has been encouraged via videoconferencing or phone messages. In cases of in person need of consultation proper social distancing observed with minimal attendants and donning PPEs by all staff.

Methodology to start Andrology services

There is very limited data to suggest viral shedding in semen of Covid positive patients. Recently there has been a recent study (Li et al, 2020) depicting presence of coronavirus in semen samples of COVID-19 patients. Hence, andrology services have been resumed taking all necessary precautions.

All males are tested for COVID-19 and only those patients with negative tests are allowed to continue their fertility treatment. The collection room has proper written instructions for semen collection procedures, and person-to-person contact is avoided. All single-use materials are disposed off immediately after use. In the case of semen cryopreservation, a separate tank has been assigned for all COVID-19 positive males. Dedicated areas and equipment have been assigned for patients with COVID-19, followed by thorough disinfection after the procedure.

Air quality is being given special attention, with proper filtration systems and their maintenance in the Andrology laboratory. A possible threat to all cryopreserved samples is the liquid nitrogen contaminated with COVID-19, which needs to be taken care of at the time of thawing. Sperm cryopreservation is now considered in special vulnerable group of patients, which includes males undergoing different treatments for improving semen quality and quantity, or they are males with cancers, autoimmune or inflammatory diseases, as they have short fertility windows for achieving parenthood.

Embryology lab protocols:

- Routine good laboratory practices have been followed with proper protection of staff.
- Extra care has been taken to reduce exposure to native follicular fluid (spillage inside LAF, tight lid, separate bins, and immediate disposal).
- The number of flushing media droplets used for washing the gametes is increased.
- A closed type vitrification system, which avoids direct contact of embryos to liquid nitrogen, can be used to avoid cross-contamination.
- Entire bench-top incubator/compartments has been kept for all positive or suspected cases to avoid risks of cross-contamination.

- Freeze-all protocols have been encouraged in the current situation.
- Air handling units are switched on all the times to create positive pressure and to provide HEPA filtration which minimizes the chance of viral spread.

3. Results

Starting ART Cycles

In accordance with the Joint IFS-ISAR-ACE recommendations on resuming ART services, we have started ART cycles of desiring patients.

High risk patients (hypertension, diabetics, chronic medical problems and patients on immunosuppressants) have been deferred treatment.

Third party reproduction (oocyte donors and surrogates) cycles are avoided as of now.

Triage and screening of both husband and wife is done on D2 of menstrual cycle followed by PCR testing of both. Only PCR negative patients are taken for ovarian stimulation for oocyte pick up or endometrial preparation for FET.

Repeat testing is done on 48 hrs before hcg trigger and patients are advised to home isolate themselves once the stimulation starts so as to minimize the chance of acquiring infection.

Fixed antagonist protocol for IVF is being used, where antagonist is started on D6/7 rather than follicle size criteria, to reduce visits for ultrasound monitoring.

Consultations for TVS are adequately spaced out to minimize patient to patient interaction. Also sanitization of ultrasound probe and couch being done after every patient visit.

4. Discussion

Due to the current situation in the COVID pandemic and the relaxation permitted by the government gradually permitting non-essential services, Infertility services are being resumed according to the guidelines set by the ministry of health and family welfare. Infertility and IVF services should be reopened especially for patients with decreased ovarian reserve and those requiring fertility preservation such as cancer survivors after proper counseling and individualizing a case.[1]

The decision to proceed or postpone the ART cycle should be left to the couple after thorough counselling about all the issues related to treatment and the potential risks involved during the COVID-19 pandemic, even the risk of getting COVID infection in pregnancy. The information on the effect of COVID-19 on infertility and early pregnancy is limited, but no evidence that the infection increases the risk of fetal malformations or risk of abortions is known till now.

All discussions and planning regarding the ART cycles to be completed 2 weeks in advance. Couples are advised to

follow social isolation for 2 weeks before the day of starting of the treatment. This counseling is done via telecommunication to limit social interaction.

Testing by RT-PCR is done at the commencement of treatment i.e. on day 2 of the IVF/ICSI cycle in our center. A repeat test is done before the hCG trigger. The husband also needs testing at least once during the cycle, preferably at the start of the cycle. Before embryo transfer, COVID-19 testing is done about 1-2 days before the procedure. In case either partner turns positive on tests, they should help in contact tracing in keeping with the national policy. If a patient comes out to be positive, the cycle is cancelled.

Oocyte retrieval can be done under IV sedation or propofol for minimal risk to the anesthetist. Adequate PPE should be worn for all the cases. The interval between the cases should be minimum to allow the disinfection of OT. Disinfection of operation theatre, transfer room, and IVF laboratory equipment like incubators, aspiration pumps is done as per infection guidelines. Embryo transfers are performed in low-risk or asymptomatic patients.

Universal good practices are being followed in the laboratory also by each staff which includes the use of proper personal protective equipment like eye protectors, FFP-2 or N-95 face masks, double gloves, shoe covers, and disposable impermeable gowns and face shield. The number of individuals at a time in a facility has been minimized. Other forms such as social distancing and hand hygiene are followed at all the time.

All body fluids including follicular fluid and semen are a potential source of SARS-CoV-2. Appropriate semen processing techniques should be adapted to reduce viral load. High-security vapor storage tanks are used for cryopreservation. The sanitization of the laboratory environment, equipment, and devices is done with appropriate nonembryotoxic disinfectants at the end of each procedure.

Covid19 has changed the way infertility treatment is being provided keeping in view the safety of both the doctors and the patient. Extensive guidelines and new protocols need to be set up so that patient care can be provided with minimum risks.

5. Summary

Infertility is a disease and needs proper treatment. Infertility and IVF services need to be reopened especially for patients with decreased ovarian reserve and those requiring fertility preservation like cancer survivors or patients with autoimmune disorders considering that the pandemic is here to stay for long. Hence in accordance with Joint IFS-ISAR-ACE recommendations ART cycles have gradually been started in our centre.

The decision to proceed or postpone ART cycle should be left to the couple after thorough counselling regarding potential risks of contracting COVID-19 infection, during pregnancy as well. Patients with chronic medical illness have been deferred infertility treatment. Surrogacy is also being avoided.

All precautions such as use of adequate PPE, proper disinfection of OT and equipments, limiting the number of staff inside OT, appropriate semen processing techniques to reduce viral load should be followed. COVID testing by RT-PCR must be done at the start of procedure and repeated before ovum pickup. Patients are advised home isolation and telephonic counselling done to reduce the visits.

6. Conclusion

The time has come when fertility services should be reopened for infertile couples considering the psychosocial impact infertility has especially for females. Taking adequate precautions and following set protocols and guidelines are essential and to provide infertility treatment and achieve a successful outcome in the present scenario.

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