



# COVID-19 Pandemic and Infertility: Gynecological Dilemma from an Indian Perspective

Avir Sarkar<sup>1</sup> · Pradip Kumar Saha<sup>1</sup> · Aashima Arora<sup>1</sup>

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## Abstract

As the emaciated healthcare system is attempting to break the tide of the novel coronavirus pandemic across the globe, the highest cost of this fight is being borne by the third world countries. India is currently experiencing the peak incidence of COVID-19 cases. For the last 9 months, non-emergency services including OPDs have been suspended in majority of the hospitals to divert resources for combatting emergency medical care during this deadly pandemic. This temporary pause and containment could be detrimental to even patients suffering from malignancy. During this critical hour, commencement of infertility treatments including assisted reproductive technologies (ART) will add to additional burden upon the crippled medical fraternity. Fate of thousands of patients seems to hang by a fine thread now. In the resource-poor countries, it is our duty to divert maximum medical power to curtail this contagious pandemic rather than focusing on non-urgent treatment services.

**Keywords** COVID-19 · Pandemic · Infertility · Telemedicine

In the rush to get back to normal, use this time to decide which parts of normal are worth rushing back to”.—Dave Hollis

As of 14th December, 2020, WHO confirms the virus spread to 214 countries infecting around 72,862,774 people with 1,623,192 documented deaths worldwide [1]. Rapid community spread owing to sustained surface viability and high virulence of the virus has caused a potential threat to the community. India, being the second most populous country in the world, harbors the likelihood of infecting the highest number of individuals if the rate of spread continues at the current trend. India is witnessing around 36,000 new cases daily which is the highest in the world [1]! The magnitude of the pandemic has already caused an overwhelming strain upon the healthcare system of the country due to number of patients exceeding the capacity of hospital beds.

Around 30 lakh couples seek infertility treatment in India every year, among whom, 5 lakh undergo intrauterine insemination (IUI) and in vitro fertilization (IVF) procedures [2]. During this COVID-19 era, infertility services have really suffered a lot. The onset of this deadly pandemic has led to postponing and rescheduling of infertility services worldwide. With the declaration of social lockdown in various provinces of the subcontinent from mid of March, couples aspiring for parenthood never thought that their next visit to the clinics would be delayed not only for days but for months together. As IVF is a costly and complex procedure, the delay of such services has caused unimaginable mental and emotional toll on couples keen to embrace parenthood. In a recent anonymous cross-sectional online survey in the USA, infertility was found to be the most frequent top-stressor among general population and was almost comparable to the fear of the pandemic itself (66% vs 63%) [3].

With the gradual stabilization of COVID-19 statistics worldwide, recent upcoming recommendations are proposing a need to restart the provisions of assisted reproductive techniques (ART) [4]. European Society of Human Reproduction and Embryology (ESHRE) considers infertility as a disease and so advises to restart ART once the risk of SARS-Cov-2 infection starts to show a decline [4]. Proper screening and triage questionnaire pertaining to symptoms and signs of

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✉ Pradip Kumar Saha  
pradiplekha@yahoo.co.in

<sup>1</sup> Department of Obstetrics and Gynecology, Postgraduate Institute of Medical Education and Research (PGIMER), Chandigarh, India

COVID-19 infection specific to the population needs to be implemented prior to commencement of ART. Triage negative patients can go ahead with their infertility treatment. In case of mild non-specific symptoms, ESHRE recommends testing for SARS-Cov-2 antibodies (IgM and IgG), whereas, for patients with specific symptoms, self-quarantine and health advice is recommended. Treatment plan for each couple must be individualized pertaining to pandemic crises. Telemedicine facilities should be used in order to minimize physical visits to clinics thereby reducing physician-patient contact [4]. Oocyte retrieval and embryo transfer are allowed only in asymptomatic low-risk couples. Routine good laboratory practices are to be followed. Re-triaging after 3 weeks of procedure is a must to identify potential infective patients. In positive re-triage patients, further treatment has to be discontinued thereof. High security straws and vapor phase storage tanks are a must for the cryopreservation of gametes and embryos from re-triage positive patients.

Although it seems plausible from a global point of view, low-income countries like India cannot afford to comply with such high-cost treatment services. Although oocyte and embryo cryopreservation seems to be a promising option for elderly infertile couple during these times, considerations should also be kept in mind of the risks of cross contamination of stored tissues [5]. In a country where 27.5 million couples actively conceive with ART every year, one can imagine the extra burden imposed on healthcare services during this devastating COVID-19 era [2]!

Novel coronavirus is spreading like a wildfire in India presently. This unprecedented and exponential rise of cases warrants couples and infertility physicians to temporarily suspend all new ART treatments and postpone the started ones till disease stabilization. During this time when gynecologists over the country are trying to postpone all elective surgeries, how justified are we to commence our ART services and add burden to the medical fraternity already crippled by the ongoing COVID-19 pandemic?

The world has gone into a state of hibernation which in turn has deeply affected the economy and healthcare. Recently WHO has reported that shortage in medicine, diagnostics, and technologies has affected even cancer treatment protocols in many countries [6]. When the primary approach of the public health system is to promote social distancing, personal hygiene, and resource optimization by home quarantine due to lack of hospital beds everywhere, is it plausible to resume our non-urgent health services including fertility treatment even in the best hospitals of the country? Minimization of work hours (6 h) to combat the suffocating PPE (personal protective equipment) has further dwindled workforce.

Literacy rate in India stands 77.7% [7]. Tele-consultation, although seems an option, cannot be solely relied upon for complex ART treatment like IVF for Indian population where

many infertile couples are illiterate and find it difficult to seek medical advice through web media [8].

Although there is no proven data on pregnancy complications by COVID-19 infection, we cannot underestimate the previously established data of increased incidences of spontaneous miscarriage, fetal growth restriction, and preterm delivery in women with SARS coronavirus infection in pregnancy [9]. We cannot ignore the recent report from the Centers for Disease Control and Prevention (CDC) which showed that pregnant women with COVID-19 appeared to be at higher risk of intensive care unit (ICU) admission and mechanical ventilation compared to non-pregnant peers. Absolute rates being very low, no proper consensus can be proposed until large-scale data is available [10].

A few constructive suggestions can chart the path ahead:

1. All reproductive medicine staff across the country must endeavor to provide a meticulous emotional and psychological proactive counselling towards all infertile couples.
2. Tutorials must be implemented on recognition of symptoms of COVID-19 and routes of spread, methods to curtail exposure, necessity of social distancing, and reporting to health-care centers when symptoms arise.
3. Patient education about awareness of fertile period and home-based testing of ovulation with luteinizing hormone (LH) kits is the need of the hour.
4. Telemedicine facilities can be judiciously utilized to restart treatment in the form of ovulation induction (OI) which requires less intensive follow-up.
5. ART services like intra-uterine insemination (IUI) can be resumed in a phased manner once the rate of infection starts to decline in the country.

Extreme awe and terror among the population has left our medical fraternity helpless. Extensive research dedicated to the discovery of vaccine seems to be the only ray of hope in current time. Till then, resource-poor countries like India must focus to strengthen health services to save lives and minimize impact. Our challenge is great, but the mission is not impossible.

## Declarations

**Ethical Approval** Not applicable

**Competing Interests** The authors declare no competing interests.

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