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Poster Presentations

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The effect of Covid-19 on female fertility

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Background: Coronavirus disease 2019 (COVID-19), like other infectious viruses, can negatively affect several female reproductive systems.
Objective: We performed this study to investigate the effect of Covid-19 on female fertility.
Materials and Methods: This narrative review reviews the databases of PubMed, Cochran, Library Online Wiley, Google Scholar, Tandfonline, Doaj, Civilica, SID, Magiran, Noormags, Irandoc, IranMedex, Elmnet, and Ricest in English and Persian with the key words COVID-19, Fertility, Infertility and Male selected by MeSH and their Persian equivalents, from 2019 to February 2021. From 52 obtained articles, we finally, reviewed the full text of 7, which had inclusion criteria, and the extracted data presented in the form of a summary of the article.
Results: Among many structural proteins which COVID-19 includes, S protein is able to facilitate the entry of coronavirus into host cells by fusing viral and cell membranes. Basigin, which plays an important role in male and female reproduction, is one of the most important COVID-19 receptors and mediates its entry into host cells. Basigin is also expressed in the uterus and is essential for successful embryo implantation; therefore, disruption or inhibition of Basigin causes weakness in the embryo implantation. In addition, Angiotensin-Converting Enzyme 2 can be found in endometrial epithelial cells and human ovaries and is related to ovarian functions such as steroidogenesis, follicular growth, granulosa-lutein cell apoptosis, oocyte maturation, and ovulation. COVID-19 may infect the ovaries, uterus, vagina, and placenta through overexpression of Angiotensin-Converting Enzyme 2. Also, it may impair women's reproductive functions, resulting in infertility, menstrual irregularities, and fetal distress. The negative effect of COVID-19 on female gametogenesis is not yet certain. Only one study reported the presence of the COVID-19 virus in vaginal fluid. Researches have shown that COVID-19 infection has a lower maternal mortality rate than severe acute respiratory syndrome or middle east respiratory syndrome. Asymptomatic women developed postpartum respiratory symptoms and mother-to-child transmission after delivery. The reproductive system is always exposed to different disorders such as infertility, decreased sperm count, and motility, so medical studies should focus on the possible vulnerability of gamete and next-generation against COVID-19.
Conclusion: There is controversial evidence of the presence of COVID-19 in the seminal plasma of patients recovered or infected with COVID19. COVID-19 has multiple ways of impairing female fertility, although there have not been any cases of infected females with damage to their reproductive systems reported yet. However, the potential risk of COVID-19 infection in female fertility needs to be more assured, and we advise individuals with COVID-19 attempting pregnancy to postpone until the end of treatment. We also recommend that infertile couples take a COVID-19 test before Assisted Reproductive Technology.
Key words: *COVID-19, Fertility, Infertility, Female.*