Acta Biomed 2025; Vol. 96, N. 1: 16649 DOI: 10.23750/abm.v96i1.16649

Letter to editor

COVID-19 and fertility: Which impact?

Marta Alioto, Valentina Billone, Eleonora Conti
Department of Obstetrics and Gynecology AOOR Villa Sofia Cervello, University of Palermo, Palermo, Italy

To the Editor,

Covid Pandemic can be seen as a watershed event for humanity, not only for its health implications but also for sociological and historical reasons. It is our belief that COVID pandemic's repercussions are far to be fully understood. Therefore, our aim as scientific community is to unveil all those aspects that are still not clear, in order to provide better care for our patients. SARS-CoV-2 virus belongs to the broad family of viruses named coronaviruses and is well known for being responsible for a severe acute respiratory syndrome. However, even if pulmonary manifestations are the main clinical presentations, other organs involvement has been reported (liver, immune system, neurological system, gastrointestinal tract, reproductive system). As OBGYN, it is our goal to find all the factors that could possibly impact our patients' reproductive and psychological health, especially for those who are already undergoing fertility treatments. It has actually been shown that COVID has a detrimental effect on fertility, causing a statistically significant reduction of AMH (anti-Mullerian hormone) and AFC (antral follicles count), especially in those patients whose comorbidity are overweight/ obesity or endometriosis (1). The situation seems to be even more complex for patients with PCOS and infertility, since COVID seems to impact ovarian function. It has actually been proven that after COVID infection FSH and LH mean values tend to increase, possibly affecting ovulation and maybe consequently reducing fertility (1). Additionally, COVID interferes with hypothalamus-hypophysis axis, altering other target organs functions (e.g. thyroid, whose role in reproductive function is crucial) (2). For these reasons, testing thyroid function in patients struggling with infertility seems to be essential. The world where we are living is becoming everyday more prone to epidemics: COVID-19, Influenza, HIV, Zicka virus, ecc. In this context, which are long term implications for our patients' reproductive health? Is there anything that we could do to preserve it against these external factors? Something that we can start to do right now is dietary supplementation (i.e. vitamin D, alpha lipoic acid, inositol), since these molecules improve fertility (4,5). Pregnancies after infertility require special medical attention. In this context, we also suggest default non-invasive prenatal tests and psychological support, since our patients need many different professional figures, in a multidisciplinary context (6). To sum up, COVID's role in fertility is far from being fully explored. There are still many questions unanswered: which is COVID molecular role in fertility? which are long term consequences of infection? Which is COVID role in IVF? And of course, what can we do to contrast its detrimental role in order to support our patients? Even if COVID pandemic's memories are starting to fade, it is our duty to keep in mind all the challenges we had to face to keep our patients safe. In our opinion, these past challenges should be our leading motivation in research and clinical practice. After all, new factors open new challenges, and frankly, isn't it what motivate us all?

Ethic Approval: Not required.

Conflict of Interest: Each author declares that he or she has no commercial associations (e.g. consultancies, stock ownership, equity interest, patent/licensing arrangement etc.) that might pose a conflict of interest in connection with the submitted article.

Authors Contribution: Conceptualization M.A., Writing - Original Draft (M.A., E.C.), Writing - Review & Editing (V.B.)

Declaration on the Use of AI: None.

References

1. Gullo G, Lopez A, Loreto C, et al. COVID-19 and female fertility: an observational prospective multicenter cohort study: upholding reproductive rights in emergency circumstances. Diagnostics. 2024;14(19):2118. doi:10.3390/diagnostics14192118.
2. Medenica S, Abazovic D, Ljubić A, et al. The role of cell and gene therapies in the treatment of infertility in patients with thyroid autoimmunity. Int J Endocrinol. 2022;2022:1–10. doi:10.1155/2022/4842316.
3. Gullo G, Scaglione M, Cucinella G, et al. Congenital Zika syndrome: genetic avenues for diagnosis and therapy, possible management and long-term outcomes. J Clin Med. 2022;11(5):1351. doi:10.3390/jcm11051351.
4. Laganà AS, Monti N, Fedeli V, et al. Does alpha-lipoic acid improve effects on polycystic ovary syndrome? Eur Rev Med Pharmacol Sci. 2022;26(4):1241. doi:10.26355/eurrev_202202_28116.
5. Menichini D, Forte G, Orrù B, Gullo G, Unfer V, Facchinetti F. The role of vitamin D in metabolic and reproductive disturbances of polycystic ovary syndrome: a narrative mini-review. Int J Vitam Nutr Res. 2022;92(2):126. doi:10.1024/0300-9831/a000691.
6. Gullo G, Scaglione M, Buzzaccarini G, et al. Cell-free fetal DNA and non-invasive prenatal diagnosis of chromosomopathies and pediatric monogenic diseases: a critical appraisal and medicolegal remarks. J Pers Med. 2022;13(1):1. doi:10.3390/jpm13010001.

Correspondence:
Received: 3 November 2024
Accepted: 4 December 2024
Marta Alioto, MD
Department of Obstetrics and Gynecology AOOR Villa Sofia Cervello, University of Palermo, Palermo, Italy, Via Trabucco 180, 90146 Palermo, Italy.
E-mail: marta.alioto@gmail.com
ORCID ID: 0000-0002-6719-3631