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Medically Assisted Reproduction (MAR) in the Context of the COVID-19 Pandemic

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Abstract

The current COVID-19 pandemic poses a unique challenge for the provision of standard healthcare services. Medically Assisted Reproduction (MAR) includes interventions aimed to treat infertility, or provide services to single women or same sex couples wishing to conceive. The right to a family is a human right, as stated by the World Health Organization (WHO), and infertility is considered a disease, often time-sensitive; thus, delaying timely treatment can severely a ect a person's probability to get pregnant.

We assessed the impact of the pandemic on fertility treatment from a global perspective, describing the timeline of events, the initial reaction and recommendations of scientiýc societies, along with further guidelines on re-commencing MAR care in a safe environment. We describe the safety protocol put in place in our clinic, its results, and we discuss the current literature evidence on the e ect of SARS-CoV-2 on pregnancy, vertical transmission and neonatal health.

: Medically assisted reproduction; MAR; COVID-19; SARS-CoV-2; IVF; Pandemic; ART services; Coronavirus disease 2019

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e COVID-19 pandemic has rapidly unfolded since its outbreak

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MAR is mandatory, or these procedures are not considered "essential" medical services.

e rst reaction of the MAR community to the pandemic was a "precautionary approach" taking into consideration the lack of knowledge about the e ects of the SARS-CoV-2 virus on the reproductive process. No data was available on the presence of the virus in human gametes, its impact in early pregnancy, vertical transmission during the second and third trimester, obstetrical or neonatal morbidity/mortality, or e ects on lactation. Some of the initial guidance was also in uenced by information on the signi cant obstetrical impact of two previous coronavirus outbreaks (SARS-CoV and MERS), which showed followed guidelines and has been largely responsive to public health and individual patient concerns [15].

Along with the evolving pandemic, various organizations have been reporting and monitoring their results and opening registries on the prognosis and evolution of pregnancies a ected by COVID-19. ESHRE is collecting data on a simple online survey in their webpage, that o ers case-by-case reporting on outcomes of MAR pregnancies with a COVID-19 diagnosis con rmed [10], and the upcoming 9th edition of IFFS Surveillance, a triennial survey reporting on global MAR activity, policies and regulations will include data on activity during the pandemic (Steve Ory, personal communication).

In the meantime, a growing body of evidence in the literature is showing reassuring data on the maternal and neonatal outcome of pregnancies a ected by COVID-19, with isolated cases of vertical transmission limited to severely ill mothers, with an average pooled incidence estimated in 16 per 1000 newborns [16]. A recent "living" systematic review and meta-analysis scheduled to continuously monitor and follow up COVID-19 pregnancies, reported results on 11,432 pregnant women from 77 studies spanning from December 2019 through June 2020 [17]. e paper showed that pregnant women with COVID-19 infection are less likely to manifest symptoms of fever and myalgia and are more likely to present preterm birth and an increase in neonatal admissions. Risk factors for severe COVID in pregnancy included increase maternal age, high body mass index, and pre-existing co-morbidities.

Currently, MAR centers worldwide are following guidelines from the constantly updated statements of appointed task forces from the Scienti c Societies. Overall, these emphasize on general recommendations of personal hygiene, social distancing and face masking, but speci cally triage, testing protocols and indications, and personnel reorganization, plus telemedicine and emergency protocols.

At our clinic (unpublished data), an infectious disease committee was established, and developed a comprehensive program including training, reading materials and infographic tools for personnel, and reorganized everyday work to adapt to the current situation. All sta at the clinic (medical and non-medical) is triaged daily through a digital questionnaire and an o cial app as well, and follow similar precautions, with organization of working teams ready for replacement of sick individuals. Consultations are preferentially managed through telemedicine platforms, especially for initial consultations, review of reports and medical studies, or second opinions. If done in-person, consultations and ultrasound monitoring are now done using face masks, and eye protection through goggles or a face shield. Consultations are scheduled to avoid waiting room overcrowding, and must ideally have a 15 minute limit, partners are not allowed to attend, and every patient entering the clinic is triaged through a digital questionnaire received by mail upon con rmation of the scheduled visit. Once in the clinic, the triage is reviewed and a temperature check is done. In this way, a er six months working under this protocol, we had 9 contagions (Figure 1a), all related to their households and close relatives. e pattern followed the dynamics of the epidemiological curve in our city (Figure 1b) have avoided in-house outbreaks that would be signi cant challenges remain in our knowledge of COVID-19 disease and its consequences in reproduction, MAR treatments, and pregnancy therea er. Obstetrical and neonatal prognosis is reassuring based on the current published data, with a slight increase in preterm birth and neonatal admissions and an extremely low vertical transmission rate, limited to severe cases.

A prudent approach from the doctor and the clinic should be in place, including comprehensive discussion with patients and prospective parents on the risks and bene ts of getting pregnant during the pandemic, o ering alternative treatments including gamete or embryo cryopreservation, and in eligible cases, postponing treatment.

However, family foundation is a human right and infertility is a disease, very o en time-sensitive, and delaying treatment under the argument of a pandemic is not justi ed by current evidence. It has decimated our sta and increased the risk of propagation to patients.

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