

Fertility preservation services and COVID-19: The urgent need for phase two

Jessica Daolio^{1}, Alessia Nicoli^{1#}, Ludovica De Panfilis², Daria Morini¹, Gaetano De Feo¹, Angela Falbo¹, Lorenzo Aguzzoli¹ and Maria Teresa Villani¹**

¹Department of Obstetrics & Gynecology, Azienda Unità Sanitaria Locale - IRCCS di Reggio Emilia, Viale Risorgimento 80, 42123 Reggio Emilia, Italy

²Unit of Bioethics, Azienda Unità Sanitaria Locale - IRCCS di Reggio Emilia, Viale Risorgimento 80, 42123 Reggio Emilia, Italy

^{*}Joint First Authorship

Abstract

By the time of writing, epidemic in Italy, one of the countries at the epicentre of the European COVID-19 outbreak, has entered phase 2 with high levels of caution. The overall system has been burdened with the paralysis of standard practices dedicated to the delivery of health services. This interruption has included the provision of assisted reproductive treatments to infertile couples, apart from fertility preservation services to oncologic patients. On behalf of a tissue establishment inside a public hospital, we experienced a reduction of 65% of demands for fertility preservation. The unexpected and unavoidable shifts of health networks required to overcome the COVID-19 pandemic have indirectly created a new barrier obstructing the access to fertility preservation services. It is known that gaps in the organization of oncofertility cares and the lack of patients' awareness regarding fertility preservation strategies are the most common barriers to services. The delicate working conditions due to COVID-19 have amplified those barriers, complicating the chance of counselling cancer patients of fertile age about fertility preservation options. The restart should include strategies to reduce the risk of a missed reproductive counselling, limiting the chance for the virus to become a further barrier.

The COVID-19 emergency and the revolution of ART networks

As the novel coronavirus SARS-CoV-2 infection spread and the related disease (COVID-19) outbreak started, the confinement has forced people worldwide to change daily habits concerning family dynamics, social relationships and working activities, determining a growing number of psychological and physical difficulties hard to face. Italy has been the first and one of the most injured countries in Europe, accounting so far for at least 223.096 COVID-19 cases [1]. The country is currently entering in phase 2: high levels of caution must be taken to restart. Knowledge related to the virus infection has made substantial progress, but events evolve rapidly, requiring a constant adaptation of interventions with implications for health and citizen's rights. Healthcare services keep on reorganizing many activities in order to manage this delicate phase.

During the last two months, the COVID-19 outbreak has burdened the overall system and paralyzed usual practices dedicated to the delivery of health services, including the provision of assisted reproductive treatments (ART). ART activities have been interrupted due to the lack of comprehensive knowledge on the SARS-CoV-2 pathogenesis in mothers and fetuses during pregnancy. At this note, the European Society of Human Reproduction and Embryology [2] and the American Society for Reproductive Medicine [3] has recommended deferring pregnancy by freezing all gametes or embryos in already started cycles and advised suspending the initiation of treatments, except for oncofertility cases, in planned cycles. In Italy, the National Transplant Centre [4], that authorizes ART activities, and the national scientific societies [5,6], also published statements on the management of patients undergoing ART and in vitro fertilization (IVF) laboratories during the pandemic emergency, following the international guidelines.

Nonetheless, the national reorganization of public hospitals due to the COVID-19 emergency has forced some public IVF centres to suspend and arrest services, including infertility treatments for infertile couples and also the cryopreservation of gametes for oncologic patients.

Our experienced public IVF centre has undertaken specific actions from the beginning of March, in line with international and national recommendations. First of all, the staff was subdivided into two teams and educated on the proper use of personal protective equipment; to date, the two teams continue to rotate weekly into the IVF laboratories to guarantee the clinical activity but limiting interactions among team members. Staff-patient contacts have been tightly restricted to unavoidable needs as well as staff-external personnel interactions. Secondly, the laboratory staff has been trained to refill the cryo-banks, sanitize the equipment and devices located in the workplaces and manage alarms arisen from remote control systems.

Already started cycles have been carried out, postponing fresh embryo transfer by the cryopreservation of gametes or embryos throughout high-security devices. A triage questionnaire has been submitted to each couple accessing our IVF centre to collect information on the health status of both partners during the two weeks ahead of the ovarian stimulation monitoring, and the day of oocyte retrieval. On the other side, all planned ART cycles have been suspended, apart

***Correspondence to:** Jessica Daolio, Department of Obstetrics & Gynecology, Azienda Unità Sanitaria Locale - IRCCS di Reggio Emilia, Viale Risorgimento 80, 42123 Reggio Emilia, Italy, E-mail: jessica.daolio@ausl.re.it

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from those aimed at fertility preservation for malignancies. In female patients, the fertility preservation activities were guaranteed by the Emilia Romagna oncologic network to which our centre belongs to. The network has provided for patient's triage up to almost three times via phone: at the first contact between patient's clinician and our staff, at the time of scheduling the day of reproductive counselling at our centre, and at every patient's access to our hospital. On the day of counselling, the ovarian stimulation protocol was supplied to the patient in order to further reduce hospital admissions and travelling during the lockdown period. For male oncologic patients, the triage has started via phone the first time the patient was referred to our sperm bank, two days ahead of the day of cryopreservation, and before starting semen treatment.

The real impact of COVID-19 on oncofertility: a further unexpected barrier to access fertility preservation services

Demands of fertility preservation from oncologic patients have been managed by direct access to our centre accordingly to the patient's health status, or by semen delivery if necessary. Unfortunately, many delivery services had already been recruited for the delivery of personal protective equipment, forcing patients to access to the hospital personally. As a consequence, we have registered a decrease in the number of accesses to fertility preservation service up to 65%, the majority of which concerns the sperm bank. On behalf of a tissue establishment inside a public hospital, we have experienced a real reduction in the administrative personnel and laboratory staff in order to respect safety, quarantine or lockdown measures. Based on the limited number of patients we have treated so far, this limitation has not hampered the continuity of our activity. At the same time, a high number of personnel and outpatient services have been reorganized or interrupted to overcome the COVID-19 pandemic, leading to the introduction of unexpected and unprecedented shifts in health networks, including the oncologic one. Based on our experience, it is possible to speculate that the paralysis of regular health care providers has delayed the number of new cancer diagnoses with an impact on demands for fertility preservation. In our hospital, surgeries and treatments requiring patient's admission have been limited to urgent cases only, based on a balanced evaluation of risks and benefits for patients. As a consequence, the working conditions characterizing the COVID-19 lockdown period have complicated the chance of proper reproductive counselling in cancer patients of fertile age, making difficult the access to fertility preservation service.

It, therefore, stands to reason that the novel coronavirus SARS-CoV-2 constitutes a new barrier to fertility preservation services. According to the literature [7-9], the quality of oncofertility care is variable, and the uptake and utilization of fertility preservation services remains low: gaps in the organization of oncofertility care and the lack of patients' awareness regarding fertility preservation strategies are the

most common barriers to services. During the emergency phase, those barriers have been further amplified. The COVID-19 pandemic could create a new bottleneck for oncologic patients concerning their quality of life and moral rights. It has generated such a negative psychological pressure so that the chance of parenthood, in terms of right, qualitative component or added value, for oncologic patients involved in therapeutic networks, is no more an item unavoidable: at the end of the pandemic, patients who did not undergo fertility preservation will be the only ones to deal with this missed opportunity.

Conclusion

The phase two has to include strategies to reduce the risk of a lack of reproductive counselling for oncological patients, limiting the chance for the virus to become a further barrier. The reorganization of the national health care system due to COVID-19 outbreak has shown that regional health care networks are of relevance to safeguard patients and the community. The strategies implemented during the lockdown have to be strengthened, as they provide the basis on which we have to restart health services. In the field of fertility preservation, each tissue establishment has to revise new stakeholders among oncologic networks to make them suitable for the current novel situation. As this note, the scientific dialogue is of relevance to keep all parts involved in oncologic care providers educated to make the right decision *for patients and with patients*: "the patient action" is very important [10], as COVID 19 outbreak has taught us. We have to improve the quality of our communication skills truthfully and accurately, in order to find the best way to discuss with patients about their preferences, desires and values, and support patients in making the best possible choice.

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