



Oncofertility programs still suffer from insufficient resources in limited settings

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In this issue of the *Journal of Assisted Reproduction and Genetics*, Salama and a distinguished group of researchers published data from an online survey comparing fertility-preservation practices in 14 fertility centers in under-resourced settings with 25 fertility centers in optimum resource settings [1]. They evaluated the availability of fertility-preservation techniques and the rate of their future use in reproductive-age women diagnosed with breast cancer using a score system developed to classify the different centers. The authors demonstrated that reproductive centers in optimum resource centers had better assessment scores, especially considering the use of established fertility-preservation techniques. Furthermore, they reported that experimental techniques such as artificial ovary and stem cell technology are rarely used, demonstrating opportunities for innovation and technology in the near future.

Oncofertility is a reproductive medicine field that involves assisted reproduction and cryopreservation techniques for individuals or couples at the time of a cancer diagnosis, allowing a holistic approach to care. Despite substantial interest in maintaining reproductive potential [2] and meeting current scientific recommendations [3, 4], not all patients have access to this type of treatment. The primary explanations are lack of information provision, the perceived risk of pursuing fertility-preservation treatments, non-referral from oncologists, dilemmas regarding prioritizing one treatment over another, personal situations, and costs [5]. These factors might be even more pronounced in under-resourced settings.

This study was the first to assess possible differences among reproductive centers located in optimum vs. under-resource areas. Given these data, attitudes aiming to reduce the differences and to improve the quality of care for patients

diagnosed with breast cancer around the world are necessary. Deepening the understanding of these differences could still be beneficial in order to develop strategic actions. Future work could assess the rate of random-start ovarian stimulation cycles between the centers. It is known that patients diagnosed with cancer should start the oncological treatment as soon as possible since delays could affect their cancer prognosis. As some women may present themselves at the reproductive center in different stages of the menstrual cycle, the use of random-start ovarian stimulation protocols would enable the fertility-preservation treatment in a shorter period of time, without compromising the beginning of oncological treatment. Furthermore, the comparison of the time interval between the first appointment at the oncology center and the first appointment at the reproductive center in these different settings would allow us to understand if there are any variations and what attitudes could be taken in order to reduce this difference. The comparison of safety markers, such as the rate of adherence to the use of ovarian stimulation protocols with aromatase inhibitors co-treatment in women diagnosed with hormone receptor-positive tumors and the rate of ovarian hyperstimulation syndromes, which potentially could promote the patient clinical worsening and delay in the start of cancer treatment, would allow us to use resources more efficiently and effectively.

Success can be achieved in centers located in under-resourced settings that suffer management and financing problems: Information, patient navigation, psychological support, and administrative and financial support all contribute.

Information

Healthcare providers who care for patients of reproductive age diagnosed with cancer should be instructed regarding protocols aimed at complete counseling. The patient or couple is entitled to all the information necessary to decide on

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the best follow-up for their case, as long as the fertility-preservation techniques do not jeopardize the patient's oncological prognosis. Decision-making must always be individualized and respect patient/couple autonomy.

The protocol of care must include brief explanations of the following: how natural pregnancy occurs; which fertility markers can be used before and after cancer treatments to evaluate the extent of the damage (mainly the use of anti-Müllerian hormone, antral follicle count, and semen analysis); the impact of cancer on reproductive function; fertility-preservation options; efficacy and limitations of cryopreservation techniques; infertility after cancer treatment and assisted reproduction treatment; reproductive planning and pregnancy after cancer; other maternity/paternity options; and oncogenetics and applications in reproduction.

The information must be specific to the needs of each patient. In child and adolescent care cases, clear communication is essential to obtain consent for any intervention. The use of decision support tools such as leaflets or e-books can assist the patient or couple with decision-making regarding the performance of fertility-preservation treatment.

Continuing medical education of healthcare providers involved in caring for patients diagnosed with cancer may improve information communication. This should involve participation in clinical meetings, medical conferences, and even multi-disciplinary discussions of specific cases.

Patient navigation

Patient or couple navigation must consider the ecosystem surrounding patient care. A professional should keep the communication channel open between the patient, the oncology team, and the fertility-preservation team. This navigation must be dynamic, as changes in treatment plans may occur (e.g., ovarian stimulation for oocyte cryopreservation may take longer than anticipated). We recommend a checklist that affords rapid and effective communication along the treatment journey involving the entire patient care ecosystem.

Psychological support

Some patients referred for fertility preservation may have risk factors for psychological distress. These patients must be identified and referred for psychological evaluation as soon as possible. In an ideal scenario, psychological counseling could be provided to all patients needing fertility preservation, as it aids in decisions about fertility-preservation treatments.

Administrative and financial support

A representation work with healthcare providers involved in the care of patients diagnosed with cancer could help with the management process and follow-up of the patient care flowchart.

Unlike couples diagnosed with infertility, who can schedule the best treatment time, even from a financial point of view, patients diagnosed with cancer do not have the same flexibility. Patients may benefit from actions aimed at obtaining discounts for fertility-preservation treatments for eligible patients through partnerships with assisted reproduction laboratories. In addition, partnerships with the pharmaceutical industry could help obtain free or discounted fertility drugs when needed. In addition, partnerships with credit companies can facilitate treatment payment through extended payments with low interest rates. Finally, the inclusion of patients in research protocols or financing treatments through donations should also be actively sought.

Conclusions

Perhaps the most intriguing aspect of the work published by Salama et al. is the demonstration that there are differences in the care of patients referred for fertility preservation in low-resource settings compared to high-resource settings. Identifying these differences allows us to engage in more active management in search of universal quality care for our patients. The available technology can be valuable in this regard, as it can allow a scalable timing of interventions.

Declarations

Conflict of interest The authors declare no competing interests.

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