Position Statement on Ovarian Tissue Cryopreservation

August 2020

Current Status of Ovarian Tissue Cryopreservation

Ovarian tissue harvesting, cryopreservation, thawing and transplantation have expanded reproductive options for cancer survivors, through both spontaneous and IVF assisted conception. It has allowed induction of puberty in survivors of cancer diagnosed at a prepubertal age and the return of ovarian function in women with gonadal failure. However, to date there have been only two (Demeestere et al., 2015) live births from prepubertal cryopreserved tissue. Groups in Japan, Israel, and within Europe and the United States have been developing effective protocols for ovarian tissue cryopreservation and transplantation that have allowed for the establishment of best practices.

CFAS Position on Ovarian Tissue Cryopreservation:

Ovarian tissue cryopreservation (OTC) is no longer considered experimental by the American Society for Reproductive Medicine (ASRM) (2019) and the International Society for Fertility Preservation (ISFP) and the Oncofertility Consortium have endorsed the ASRM statement. The Canadian Fertility and Andrology Society (CFAS) recognizes the promising nature of the technology and also recognizes that it is not readily available across all provinces in Canada. In order for ovarian tissue cryopreservation to develop and become more readily available in Canada, we recommend that all available resources and expertise are mobilized by key stakeholders throughout Canada. We also encourage provincial health legislators to cover the associated costs of ovarian tissue cryopreservation for patients and to support ART labs to develop best practices.

OTC is mostly utilized in situations where an emergent cancer treatment will have a high risk of sterilization with insufficient time for ovarian stimulation, or when surgery on the ovary is already a part of the surgical management. Ovarian tissue cryopreservation is the only fertility preservation

option for prepubertal girls, ideally performed at a time when the patient is already undergoing a sedated procedure. Selection criteria need to be applied including those listed below:

Selection Criteria:

1. Age≤36 years old
2. At least 50% chance of premature ovarian failure
3. A realistic chance of survival more than 5 years

Combination modalities of fertility preservation techniques can be used to optimize reproductive outcomes.

Interdisciplinary communication between pediatric oncologists, surgeons, medical oncologists, gynecologic oncologists, radiation oncologists and REI specialists is critical to determine the optimal strategy for fertility preservation while considering time-sensitive treatments. Physicians counselling patients and families should provide information on all aspects of this process including:

1. Risks of laparoscopy
2. Expected outcomes including disclosure of clinic-specific data, or lack thereof, on ongoing pregnancy rates
3. Risk of malignant contamination
4. Alternatives such as oocyte cryopreservation (where possible), oocyte donation, and associated assisted reproductive technologies that may be necessary for future pregnancy

This information will enable patients and/or legal guardians to make an informed decision about their reproductive future.

This position statement will be reviewed regularly as the technology advances.

References:

Demeestere I., Simon, P., Dedeken, L., Moffa, F., Tsépélidis, S., Brachet, C., Delbaere, A., Devreker, F., & Ferster. A. (2015). Live birth after autograft of ovarian tissue cryopreserved during childhood. *Hum Reprod.,* 30(9), 2107-2109. https://doi.org/10.1093/humrep/dev128

Practice Committee of the American Society for Reproductive Medicine. (2019). Fertility preservation in patients undergoing gonadotoxic therapy or gonadectomy: a committee opinion. *Fertil. Steril*. 122(6), 1022–1033. https://doi.org/10.1016/j.fertnstert.2019.09.013