



OVARIAN TISSUE CRYOPRESERVATION AND TRANSPLANT

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Women and girls under 38 at high risk of ovarian insufficiency with a good possibility of long-term survival and a strong likelihood of preserving normal uterine function, are candidates for ovarian tissue cryopreservation and transplant. This is the only option for pre-pubertal girls and women who cannot delay chemotherapy as ovarian tissue retrieval does not require ovarian stimulation and is independent from menstrual cycle. To date, slow freezing procedure is preferred over vitrification, as the majority of live births have been obtained from slow-frozen ovarian cortex. Currently, orthotopic or heterotopic transplant is the only available option to restore fertility using cryopreserved ovarian tissue. The pros of heterotopic transplant include both an easy transplant procedure and access for follicular monitoring and oocyte collection. Whereas the advantages of orthotopic transplant are a favourable environment for follicular development, the possibility of natural conception and the fact that the restoration of fertility has been widely demonstrated. Ovarian tissue cryopreservation allows for the storage of numerous primordial follicles that are relatively resistant to cryodamage and enables the restoration of post-transplant endocrine function. On the other hand, the main disadvantages of this strategy are the invasive procedures used both for tissue harvesting and transplantation and the risk of reimplanting malignant cells. This risk varies depending on the malignancy and is particularly high in patients whose ovarian tissue was retrieved before treatment for leukemia, neuroblastoma or Burkitt lymphoma. Some authors advise refraining from ovarian tissue transplantation in leukemia survivors. Whilst others suggest that transplant could become an option for these patients, as long as maximal safety measures are taken, such as harvesting ovarian tissue after chemotherapy exposure and accurate searching for leukemia cells within the graft (with histology, immunohistochemistry, molecular biology and SCID mice transplant) is carried out. Indeed, the first 2 cases of ovarian tissue transplantation in patients previously affected by leukemia have been described. Considering the impact of infertility on the long-term quality of life, all young patients who potentially face premature ovarian insufficiency should be given accurate information on the available options open to them to preserve their fertility, including ovarian tissue cryopreservation.

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