

Fertility preservation in young cancer patients

Dror Meiorow

Impaired reproductive function and possible infertility are major concerns in long term young survivors of cancer treatment. The ongoing increase in the survival rates of these young patients (>75%) is therefore accompanied with a growing demand for effective, safe and specifically tailored fertility preservation options. When approaching young patients facing malignancy, an individual evaluation of potential infertility risks and possible preventive or preserving measures should be performed. Recent progress in fertility preservation methods including ovarian tissue cryopreservation and transplantation, egg and embryo freezing and ovarian transposition have significantly increased the efficacy of these methods.

Embryo cryopreservation can virtually be performed in all IVF centers. Since data regarding IVF pregnancy rates in cancer patients is currently limited, it is a common practice to use the aforementioned pregnancy rates when counseling cancer patients seeking fertility preservation. Improving pregnancy rates have been reported with oocyte cryopreservation and today the technique is more recognized. However, the role of malignancy in reducing ovarian response to stimulation, strategies designated to protect against hyper-estrogenic state associated with stimulation (co-treatment with tamoxifen or letrozole) and possible adjustments to accommodate oncologic-related time constraints should be evaluated and discussed.

Ovarian tissue cryopreservation (OTCP) aims to provide a chance for future fertility for young women and pre-pubertal girls who are at major risk for significant ovarian injury and sterility. It has been more than a decade since the first reports of live births following OTCP and re-transplantation, and to date, dozens of live births have been described worldwide. Nevertheless, significant heterogeneity exists among different groups regarding selection criteria, techniques and results evaluation. Report one-center results of orthotopic retransplantations of cryopreserved ovarian tissue in cancer survivors and evaluate the validity of commonly accepted procedure limitations. Results have indicated that is a highly effective measure to restore fertility in sterilized cancer patients. Chemotherapy exposure prior to harvesting and age > 35 is a realistic option in selected patients. Re-transplantation

in leukemic patients is possible following application of maximal safety measures. These results have led the national ethical and professional authorities to decide for the first time not to consider OTCP as an experimental modality for fertility preservation.