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Can the Vitrification procedure the right tool for fertility preservation in women with cancer?

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As the efficacies of anticancer therapies were increase and quite efficient early diagnoses have been taken place in gynecological cancer, increased long-term survival of cancer patients and long-term complications of anticancer treatments are being encountered (1). The lost of ovarian reserve or function due to gonadal toxicity is one of the major problem that mainly focused. A wide range of new fertility preservation options and/or techniques, although the majority of them are experimental, are now available prior to oncological treatments in female gamete preservation (2). Ovarian transposition, a surgical preservation technique, is one of these methods that avoid the gonadal tissue from radiation field in order to prevent the gonadal toxicity of radiotherapy. Partial and/or total (experimental) extraction, subsequent cryopreservation and re-transplantation of ovarian tissue, another surgical preventive option both for radiotherapy and chemotherapy side-effects, is expected to be a paramount method in the future that was performed in selective cases previously (2-4). Particularly, medical methods with such agents like GnRH analog or antagonists, and Danazole have been reported to prevent chemo or radiotherapy related gonadal toxicity. Cryopreservation of oocytes, zygotes and embryos either by vitrification or slow-rate freezing subsequent to ovarian stimulation and oocyte pick-up along with/without traditional IVF and intracytoplasmic sperm injection are other common preventive techniques(3,4). Currently cryopreservations of the oocyte, zygote and/or embryos are seems to be the most effective methods in fertility preservation especially in reproductive age women (5). In regard of the cryopreservation techniques vitrification has claimed to be most appropriate and efficient technique due to simplicity and cost-effectiveness (6,7). On contrary, surgical methods are still accepted as difficult, and costly alternatives, as well experimental ones such as re-transplantation are not reported to be significantly efficient and reliable alternatives. In parallel, the effects of medical preventive alternatives, those generally resulted in pseudo-menopausal situation and mainly recommended to patients prior to reproductive age, are still controversial concerning side-effects, reduced effectiveness. The number of available techniques for conserving fertility has increased in the last decade, but large studies are still needed to draw a conclusion. Some of these effective options such as vitrification of embryos are not allowed in Germany. Other technical issues remain unresolved, as is the question of medical insurance reimbursement for the most efficient procedures. All current aspects and techniques should be compared in order to presume the best method and standardization in female fertility preservation. New approaches and current management on fertility preservation in gynecological cancers were discussed in this presentation.

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