

## **Do we need a different nomenclature for 'oncofertility'?**

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Over recent years, we have witnessed the spread of the technique of ovarian tissue cryopreservation (OTC), a method now implemented in many countries and clinics around the world. Unfortunately, many girls and women are not able to access this procedure because of financial issues or the fact it is still considered an experimental approach, but well over of a hundred healthy children have been born after reimplantation of frozen-thawed tissue. Like in-vitro fertilization (IVF), where replacement of embryos does not guarantee a pregnancy, grafting of frozen-thawed ovarian tissue does not always lead to conception. It appears that younger women with larger ovarian reserve stands a better chance of conceiving. Clearly, this technique is still in its infancy and far from being fully developed, and therefore requires a considerable research effort on all levels to improve and optimize protocols and methods.

Parallel to these initial steps in the development of this new approach, it is now becoming apparent that obtaining mature oocytes after ovarian stimulation for the purpose of fertility preservation is a different strategy from OTC. While oocyte cryopreservation is a widely applied technique in routine IVF treatment, it only preserves fertility and not the other important aspect of ovarian function, namely production of sex-steroids. Ovarian endocrine function is maintained by the functional unit of the ovaries, the follicles, which are of utmost importance for establishing pregnancy, but also serve a large number of other functions throughout the body. Follicles contained in frozen-thawed cortical tissue fulfils both roles after replacement, securing fertility in terms of oocytes, but maintain production of sex-steroids and other hormones by the granulosa cells of maturing follicles.

It has taken some time to digest and ascertain that preovulatory follicles developing after transplantation of ovarian tissue do actually restore ovarian organ function. This relates to the fact that preovulatory follicles produce around 90% of estradiol available in the body during the follicular phase of the menstrual cycle and, upon transplantation of resting primordial follicles, it takes 4 – 6 months for organ function to resume for that particular menstrual cycle. The specific location of almost all primordial follicles, limited to the thin cortical layer, has technically paved the way for successful cryopreservation of large numbers of available follicles able to restore ovarian organ function.

Initially, OTC was conceived to help patients suffering from cancer, but thanks to the continued ability to secrete sex-steroids, this technique can now be used for a number of different conditions. We have suggested it may be applied to induce puberty in young girls who have had tissue removed

prior to puberty, in women with rare genetic diseases, or genetically predisposed to premature ovarian insufficiency, those with endometriosis, young women with anovulatory polycystic ovary syndrome, postponing menopause and potentially for social reasons in the future. A number of other indications where OTC may be of benefit to patients are also investigated.

The term 'oncofertility' is used as a short acronym to describe this new developing field in medical practice. Originally, it reflected its intended purpose, but today it may be considered somewhat imprecise. Indeed, the technique covers subjects beyond just oncology patients. Moreover, OTC does not just deal with fertility issues, but also endocrine function and activity. Release of sexsteroids and other hormones may actually be the desired effect in some circumstances. We therefore suggest introducing a new nomenclature to describe this novel developing field in medicine. Although the term 'oncofertility' is short and to the point, it may ultimately be too limited to describe all the different fields where OTC can be used.

Furthermore, and perhaps most important, it might also potentially deter patients without cancer from seeking treatment in oncofertility units because of the connotations of the word itself.

The hope with this newsletter is to initiate discussions that can lead to a more appropriate nomenclature of this treatment. On a personal note, I do not want to end this newsletter without suggesting my favourite replacement for the time being 'Safeguarding ovarian function (SOF)'.