

A child's right to fertility preservation when undergoing sterilising chemotherapy

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Ovarian tissue cryopreservation (OTC), harvesting and freezing ovarian tissue, is the most promising complication-free strategy to preserve potential fertility in pre-pubescent girls undergoing sterilising chemotherapy, according to a 13 year study by Fanny Chambon et al. in the journal, Human Fertility.

Almost 80% of children and adolescents currently treated for cancer or leukaemia will be long term survivors. Paediatric oncologists are concerned that side effects such as low fertility, infertility and early menopause can reduce the quality of life for survivors. Indeed, in females, cancer treatments can result in premature ovarian insufficiency (POI). Therefore, preserving fertility in young girls is becoming a key issue for improving quality of life. However, only a few teams performing OTC in children have reported on their practice.

The paper reports on 13 years' experience of [ovarian tissue](#) cryopreservation before sterilising treatment. The aim of the study on OTC in 36 girls at risk of early menopause, aged between 2 and 19 years old, at the Clermont-Ferrand City Paediatric Oncology Department is to assess how effective, feasible and risky this treatment is.

Laparoscopy was used to collect a third of each ovary that was frozen by a slow cooling protocol. Histological analysis of one random sample of each harvested ovarian tissue fragment was routinely performed before freezing.

The study uncovers unresolved issues in the practice of OTC. The minimum age to offer OTC remains undetermined, there is no current consensus on the quantity of ovarian cortex to be harvested for cryopreservation or whether best practice is to remove an entire ovary or to remove part of each ovary. Detecting ovarian damage is difficult too as it is not standardised, and re-introducing cancer cells via an ovarian graft because of malignant cells in frozen thawed ovarian tissue remains a concern.

However, the study reveals that there are no technical problems in harvesting ovaries of females aged under 10 years old. OTC procedure, in most cases, occurs without complications, it does not delay post-surgery [chemotherapy](#) and the post operation recovery is straightforward. No tumour cells were found in histological analysis.

To date, no pregnancy has yet been achieved by implanting ovarian tissue harvested before puberty. However, it can be assumed that a younger girl has an increased chance of restored fertility since she has a greater follicular reserve at time of harvest. The Auto graft technique is the only valid option to obtain pregnancy and live birth. Laparoscopy is the best way to get ovarian fragments with minimal post operation complications for faster healing.

This study clearly demonstrates that ovarian tissue cryopreservation (OTC) remains the best option in paediatrics available to preserve the fertility of prepubertal girls treated with gonadotoxic chemotherapy. The authors of the study conclude, "It is justifiable that children who require sterilizing treatments should benefit from this technique."

More information: Fanny Chambon et al. Cryopreservation of ovarian tissue in pediatric patients undergoing sterilizing chemotherapy, *Human Fertility* (2016). [DOI: 10.3109/14647273.2016.1151561](https://doi.org/10.3109/14647273.2016.1151561)

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