Female fertility preservation during cancer treatment

MARCELLE RUTH
CANCER CENTRE & SPECIALIST HOSPITAL

The Marcelle Ruth Cancer Centre & Specialist Hospital is the first comprehensive healthcare centre of its kind in Nigeria and, indeed, West Africa.

> Our promise

In everything we do, we believe that compassion and care make all the difference.

With vast experience and understanding, our specialist team uses the very latest technology and treatments to deliver the best outcomes possible.

From screening and diagnosis to treatment and ongoing support, we are committed to providing outstanding care to those in need.

About this booklet

We understand it can be overwhelming for anyone to undergo cancer care, but we are here to provide you with help and support.

The focus of this leaflet is to help you and your family understand more about female fertility preservation during cancer treatment.

Female fertility preservation during cancer treatment

Cancer and anticancer treatments may affect post-treatment ovarian function by a reduction in the ovarian primordial follicle pool, hormonal imbalance or by anatomical or functional changes to the ovaries, uterus, cervix or vagina. Notably, in cancer patients, menstrual function can resume many months after completion of treatment; in addition, infertility may occur despite temporary resumption of menses.

Chemotherapy-related amenorrhoea is mainly due to damage to growing follicles that occurs within weeks after chemotherapy initiation and is often transient.

Considering the rising trend in delaying childbearing and the higher number of patients who have not completed their planned family at the time of diagnosis, providing information for fertility preservation is vital.

This leaflet provides a framework for fertility preservation in post-pubertal female cancer patients.

Onco-fertility counselling

All cancer patients of reproductive age should receive complete fertility counselling as early as possible in the treatment planning process, irrespective of type and stage of disease. This should include:

- discussion of current or future family desire, health and prognosis
- the potential impact of the disease and/or proposed anti- cancer treatment on fertility and gonadal function, chances of future conception, pregnancy outcomes and offspring
- the need for effective contraception in the context of systemic anticancer treatment.

Onco-fertility counselling is individualised based on patient/couple and disease/treatment-related factors, with patient interest and age as well as type of treatment being the most important.

Fertility preservation options

Oocyte and embryo cryopreservation

Oocytes and embryos can be safely and efficiently cryopreserved before the initiation of anticancer treatments. While embryo cryopreservation is an established and reproducible technology, it requires the use of sperm and the presence of a partner or donor. Conversely, oocyte cryopreservation can be carried out without a partner and so it is the preferred option for most post-pubertal women.

Ovarian tissue cryopreservation

Ovarian tissue cryopreservation is an alternative approach for preserving fertility before gonadotoxic treatments. While it is still regarded as experimental in some countries, the American Society for Reproductive Medicine suggests that it should be considered as an established procedure to be offered to carefully selected patients.

Ovarian transposition and gonadal shielding during radiotherapy

Two options exist for protecting ovaries: transposition of the ovaries before radiotherapy and gonadal shielding during radiotherapy. Ovarian transposition outside the planned radiotherapy field is a routinely used technique to minimize ovarian follicle exposure. The procedure is mostly carried out by laparoscopy to accelerate recovery and avoid postponing.

Medical gonadoprotection

The aim of medical gonadoprotection during chemotherapy is to reduce the risk of exposure to the ovaries and its associated fertility and endocrine-related consequences. Therefore, this strategy may also be of value in patients without a desire for pregnancy and not interested in fertility preservation. Potential advantages are its suitability for premenopausal patients of all ages, non-invasive nature, low health risk and possible use in conjunction with fertility-preservation strategies.

The potential disadvantages of medical gonadoprotection are the possible interference with anticancer therapies, risk of damaging the oocytes and the need for administering these agents before and during anticancer treatment.

Temporary ovarian suppression during chemotherapy achieved by administering a Gonadotropin-releasing hormone agonist (GnRHa) is the only strategy that has entered clinical use. Several potential new methods of medical gonadoprotection with hormonal and non-hormonal agents are currently under investigation.

Recommendations

- When a two-week treatment delay is feasible, oocytes or embryos can be safely and efficiently cryopreserved before the initiation of anticancer therapies.
- Random start ovarian stimulation protocols should be applied to limit the delay in starting anticancer treatments.
- As age is a major determinant of the likelihood of success, women will be clearly advised of their age-related chance of achieving a successful pregnancy.
- Aromatase inhibitors can be given to prevent supraphysiological oestrogen concentrations during ovarian stimulation in women with oestrogen-sensitive tumours.
- Ovarian tissue cryopreservation is an alternative procedure when oocyte or embryo cryopreservation are not feasible, with the following consideration: ovarian tissue cryopreservation should not be offered to older women; current evidence supports 36 years as an age limit.
- Ovarian transposition should be considered in order to try to preserve ovarian function in women 40 years of age with an indication for pelvic radiotherapy.
- Gonadal shielding may be an alternative strategy to ovarian transposition, not requiring a surgical intervention.
- For premenopausal breast cancer patients undergoing chemotherapy, temporary ovarian suppression with a GnRHa is recommended for ovarian function preservation, irrespective of tumour subtype.
- For young cancer patients interested in fertility preservation, temporary ovarian suppression with a GnRHa during chemotherapy should not be considered as an alternative to oocyte or embryo cryopreservation, but it may be offered as an additional option following cryopreservation strategies or when they are not accessible.

Post-treatment pregnancies in cancer survivors

- Patient/couple and disease/treatment-related factors should be considered when counselling adult cancer survivors regarding the feasibility and safety of post-treatment pregnancies.
- After adequate treatment and follow-up, having a pregnancy in cancer survivors should not be discouraged for safety reasons, even among women with a prior history of hormone receptor-positive breast cancer.
- Post-treatment pregnancies in adult women with a prior history of cancer should be monitored more closely due to the potential increased risk of developing obstetric and birth complications.
- Breastfeeding can be considered in cancer survivors who are not under active treatment.
- Fertility preservation strategies should preferably be used at the time of diagnosis before treatment initiation.
- Where appropriate and allowed by local regulations, oocyte donation can be considered as an option in cancer survivors.

If you have any other questions or information, please ring our client services managers on +234 809 042 5888 or + 234 906 200 0773.

Notes

Marcelle Ruth
Cancer Centre & Specialist Hospital
Plot 1192D, Olubosi Close
Victoria Island
Lagos
Nigeria

T: +234 906 200 0773
E: patientservices@marcelleruth.com
W: www.marcelleruth.com

MARCELLE RUTH
CANCER CENTRE & SPECIALIST HOSPITAL