

# Fertility preservation opportunities for cancer patients in Malaysia

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## ABSTRACT

**Fertility preservation is significant for oncology patients to maintain their ability to start a family when they are ready. Onco-fertility, as a discipline, exists at the intersection of oncology and reproductive medicine that safeguards and expands the fertility options for cancer survivors, by facilitating early intervention and suitable treatment with favourable outcomes. Successful fertility preservation requires a comprehensive networking among the gynaecologists, oncologists, pathologists, imaging and other specialists, involved in diagnosing and treating cancer in the reproductive age group. There are several ways in which fertility can be preserved, like role of gonadotrophin releasing hormone analogues, in vitro maturation, and cryopreservation.**

## KEYWORDS:

*Fertility preservation, gonadal cryopreservation, ovarian tissue cryopreservation, oncofertility, oncology*

## SUMMARY

Cancer affects patients of all ages and those in the reproductive age group are not spared. With the availability of newer modalities for early diagnosis and treatment, the survival of patients has improved affording a fulfilling life and start of a family when desired. Cancer treatment can potentially diminish fertility due to its effects on the gonads. Unless safeguards are put in place most of the cancer survivors seeking fertility treatment, unfortunately, are left with poor gonadal reserves crashing their hopes for successful treatment. The scope for the full range of fertility preservation options, including the technology for the ovarian tissue cryopreservation, are now available in Malaysia. For this new facility to be of optimal benefit for the patients, a new awakening needs to be generated among the clinicians in the frontline of cancer diagnosis and treatment, so that they go beyond cancer treatment and preserve fertility wherever possible.

## INTRODUCTION

The 25th of July, 1978 is a landmark date in the advancement for fertility treatment with the birth of Louise Brown, the world's first in vitro fertilisation (IVF) live birth.<sup>1</sup> Malaysia soon joined this advancement, with the country's first live birth from IVF documented in 1986.<sup>2</sup> Fertility treatments have progressed by leaps and bounds since.

Fertility preservation (FP) essentially means maintaining the ability of an individual or a couple to start a family when they are ready. It is a fundamental concern for women in the reproductive as well as preadolescent age groups, when future fertility may be compromised. The most usual reason for FP intervention is cancer therapy.<sup>3</sup> Other conditions that affect fertility potential include advancing age, chromosomal, autoimmune and metabolic disorders, and specific surgical interventions.<sup>4</sup>

Oncofertility is a new field coined for FP in patients suffering from cancer. This involves an interdisciplinary approach at the intersection of oncology and reproductive medicine that expands fertility options for cancer survivors.<sup>5</sup> There are several ways in which this can be achieved, including gonadotrophin releasing hormone analogues, in vitro maturation, and cryopreservation.

There are several categories of cryopreservation. The embryo, oocyte and, sperm cryopreservation methods is well established for more than 20 years, with research on ovarian tissue cryopreservation (OTC) being greatly refined. In 2005, the first live birth from an ovarian tissue transplant was achieved.<sup>6</sup> This was followed 10 years later with a birth from an ovarian tissue that had been cryopreserved from a pre-pubertal patient.<sup>7</sup> Globally more than 100 babies have been born from this technology, and there are calls for it to be an established treatment rather than experimental.

In the current medical practice in Malaysia, gynaecologists and fertility specialists rarely see any fertility preservation referral cases prior to treatment of cancer patients that may be detrimental to the gonads either by chemotherapy or radiotherapy. Referrals are more common years after treatment, once patients have found a partner and are ready to start a family. Alas, here lies the problem, as at this point, the damage to the gamete reserves has already been done. A greater awareness among the medical fraternity is the first step in overcoming late referrals. This will subsequently lead to earlier discussion with patients on the availability of such an option and making them understand the importance of early intervention in order to preserve their fertility potential. Patients are being diagnosed with cancer at younger ages, and with the advancement of treatment, survival has generally improved.<sup>8</sup> Thus, currently the time a patient spends in the reproductive age is longer. Once the primary disease has been controlled, opportunities to start a family improve. With this in mind, the opportunity to preserve or

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protect the gonadal tissue to increase the chances of conceiving for this group of patients should not be overlooked.

There is a general lack of awareness within the medical community regarding options for FP, observed from the lack of referrals from the front line physicians treating cancer in those patients of the reproductive age.<sup>9</sup> These include haematologists, oncologists, paediatric oncologists, breast and endocrine surgeons, and urologists to name a few specialities.

The Malaysian Fertility Society for Preservation (MSFP) has championed this cause to create awareness amongst the medical fraternity and public. On the 2nd of July 2020, the Society was formed by reproductive experts and representatives from the specialties involved in treating cancer patients. On the 26th of August 2020, Malaysia welcomed the launch of its first oncofertility centre by the Health Minister of Malaysia in Hospital Canselor Tuanku Muhriz, operating in the Advanced Reproductive Centre (ARC) of the hospital. The centre has been registered with the Northwest Oncofertility Consortium, which is an international interdisciplinary initiative designed to explore the reproductive future of cancer survivors and champion the cause of oncofertility. ARC provides a full range of fertility preservation options, including ovarian tissue cryopreservation (OTC). In Asia, OTC is still largely considered experimental. With the equipment and media obtained, along with ethical approval from the Ministry of Health, the centre began its services. The centre has thus far performed four cases of OTC since August until the time this editorial was written.

## CONCLUSION

The future for these fertility preservation opportunities in Malaysia hinges on the next two years in terms of how the MSFP can form a network and generate awareness so that the offerings of this service can be ingrained in the practices of health care providers. It is difficult enough breaking the devastating news of cancer diagnosis, but fertility preservation should not be disregarded.

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