Review Article

Fertility Preservation in Men after Cancer Treatment; a Review Article

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Abstract

Some cases of male infertility are due to the destructive side-effects of anticancer treatment methods such as chemo and radiotherapies on germ cell lines. The increase in the survival rate of cancer patients who undergo treatment, especially children, has drawn attention to fertility preservation. The most common and effective technique in preserving male fertility is sperm freezing and its subsequent IVF. Children cannot efficiently produce sperm because of their spermatogonial immaturity. One of the strategies to maintain fertility in these patients is to preserve the testes or the germ cells by freezing them for their later maturation and production of fertile sperm, although the state in which the spermatogonia may not undergo maturation is one of the main obstacles faced in this method. Therefore, scientists have attempted to transplant cryopreserved testis tissues or produce in vitro-matured spermatozoa in this group of patients upon anticancer treatment. In this study we reviewed the germ cell biology, the side-effects of chemo and radiotherapies on germ cells and fertility preservation techniques in adults and children undergoing anticancer treatment.

Keywords: Chemotherapy, Cryopreservation, Fertility preservation, Germ cell transplantation, Radiotherapy, Spermatogonial transplantation.
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