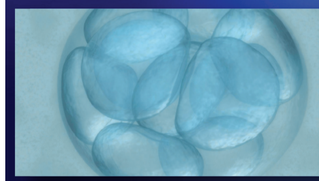

Assisted Human Reproduction Canada

Cancer and Preserving Your Fertility:

a Guide for Patients

Assisted Human Reproduction Canada | Procréation assistée Canada

Canada

Introduction

A cancer diagnosis is devastating at any age. Today, medical professionals are constantly informed of and equipped with the latest medical technologies, making diagnostic procedures and treatment increasingly successful. As a result, a growing number of young Canadians diagnosed with cancer survive. In 2005, of the approximately 10,000 Canadians ages 20–44 diagnosed with cancer, an estimated 80% survived.[1]

Advances in the diagnosis and successful treatment of childhood, adolescent, and adult cancer have allowed many young women and men to lead normal lives after overcoming their disease. However, life-saving cancer treatments may also affect fertility.

Infertility is defined as the inability to have children. For men, this means producing an inadequate number of sperm, or producing sperm that is damaged and unable to naturally fertilize a woman's egg. For women, infertility means the inability to produce eggs, to become pregnant, and/or to carry a pregnancy to term.

Thanks to advances in the field of assisted human reproduction and fertility preservation, cancer patients who wish to consider parenthood in the future now have fertility preservation options. Options are available both for cancer patients facing oncology treatment and for those who have already completed their treatment.

To allow for the most fertility preservation options, it is important to consider your options *prior* to the start of your cancer treatment, and to let your physician know that you wish to attempt to preserve your fertility.

This brochure outlines the risk(s) of specific oncology treatments and discusses both proven and experimental fertility preservation options.

[1] Cancer Care Ontario: **Cancer in Young Adults in Canada**, Toronto, Canada, 2006. Accessed on October 8, 2008 at http://www.phac-aspc.gc.ca/publicat/cyac-cjac06/pdf/cyac-cjac-2006_e.pdf.

Cancer Treatment and Fertility Risks

Certain cancer treatments are more likely to cause infertility than others. Chemotherapy, radiation and surgery can result in infertility, depending on the type, dose, length, frequency, and location of treatment.

Chemotherapy risks: Certain types of chemotherapy can cause permanent damage to eggs and sperm.

Radiation risks: Whole body or abdominal/pelvic radiation can result in permanent infertility in females and males by causing irreversible damage to the eggs or sperm cells. For women, radiation targeted to the pelvic area often results in irreversible damage to the uterus, making a woman unable to conceive or maintain a pregnancy.

Surgery risks: Surgical treatment of cancers of the reproductive system may cause infertility, especially if certain organs such as the testes, uterus or ovaries are removed as part of the procedure.

Preservation Options for Cancer Patients

Note: The explanations contained in this pamphlet are brief overviews of potential options for fertility preservation. Please consult with your physician for more guidance and information on your individual situation.

Females

Egg freezing: The freezing of one or more egg(s).

Embryo freezing: The freezing of one or more embryo(s) (the product of an egg fertilized by sperm).

Ovarian shielding: The shielding of the ovaries and/or uterus from radiation to minimize damage to the reproductive organs.

Ovarian tissue freezing: The removal of part or all of an ovary in order to freeze it for future reproductive use.

Ovarian transposition: The surgical repositioning of one or both ovaries away from the radiation field.

Trachelectomy: Surgical removal of the cervix, leaving the uterus intact for a possible future pregnancy. This is an increasingly common treatment for early stages of cervical cancer.

Males

Sperm freezing: The freezing of sperm to attempt conception using assisted reproductive technologies at a later date.

Testicular shielding: The shielding of the testicles and/or pelvic area from radiation to minimize the risk of damage to the reproductive organs.

Testicular tissue freezing: The removal and freezing of tissue from the testicles. The procedure is experimental with no live births to date, but shows promise for the future.

Fertility Options for Cancer Survivors

Natural conception: Many female cancer survivors are able to become pregnant naturally after cancer treatment. The probability of success can be determined through blood tests and ultrasounds that measure hormone levels and ovary activity. Male cancer survivors can have their sperm tested to determine if natural conception will be possible.

Assisted reproductive technologies: There are options to preserve one's gametes, conceive and achieve a pregnancy. Before undergoing cancer treatment where fertility may be at risk, women may wish to freeze their eggs and men may wish to freeze their sperm.

Egg freezing is a relatively new practice in rapid evolution. While it is not as well established as sperm or embryo freezing, it has become an increasingly successful form of fertility preservation for women.

Alternatively, where a female cancer patient's eggs may be damaged by treatment, the couple's egg and sperm could be used prior to treatment to create *in vitro* embryos which could then be frozen for later use to achieve a pregnancy.

For male cancer patients, the frozen sperm could be used to achieve pregnancy through intrauterine insemination or *in vitro* fertilization.

In any case, you should consult with your physician to determine the best approach given your circumstances.

Donor eggs/sperm/embryos: Individuals who become infertile because of cancer treatment, may choose to use donor egg(s), sperm, or embryo(s).

Gestational carrier (surrogate mother): A gestational carrier (surrogate mother) is a woman who carries a pregnancy for an individual or couple. This is an option for women who have had radiation therapy in the pelvic or lower abdominal area resulting in damage to the uterus and/or ovarian failure, making it difficult to conceive or carry a pregnancy.

Adoption: Some private agencies may consider medical history as a factor in adoption.

Conclusion

Regardless of the diagnosis, there are many fertility preservation options that allow cancer survivors to have a family of their own. By addressing your future fertility prior to undergoing certain treatment(s), you can keep as many options as possible open for having a family later on. Whether you have been recently diagnosed, are currently undergoing treatment or have completed treatment, you can explore your fertility options by consulting with a reproductive endocrinologist (a physician who specializes in fertility and reproduction).

For more information

Assisted Human Reproduction Canada
http://www.ahrc-pac.gc.ca/

Fertile Future http://www.fertilefuture.ca/

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Cat. No. H14-49/2009E-PDF
ISBN 978-1-100-11671-6