Fertility Preservation for Women

Cancer treatments can affect a woman's ability to become pregnant and have a child. All women should be offered information about how cancer treatment could affect their fertility. If they are interested in having a child in the future, they should discuss their options for fertility preservation. Preserving a woman's fertility can take time, which could result in a delay in treatment. In cases of aggressive cancer that needs treatment quickly, options may be very limited. It is important to have an open and honest discussion with your care team regarding your wishes and options. For many women, there are options for preserving fertility. Let's review these options:

**Egg or Embryo Cryopreservation**

Cryopreservation is the collection and freezing of eggs for use at a later time. Embryo cryopreservation is the freezing of an embryo, which is a fertilized egg. Cryopreservation of eggs or embryos uses the same collection process, which can take 2-4 weeks. Fertility-stimulating medicines cause the body to release many mature oocytes which can then be collected. Cryopreservation of eggs does not need sperm because these eggs are frozen unfertilized. Unfertilized eggs are more sensitive to the freezing process because they contain water that can form ice crystals and cause damage. A method of freezing called vitrification has made the process more successful in recent years. Some centers report the same success rates with egg freezing as with embryo freezing.

For embryo cryopreservation, the egg must be fertilized with sperm. This can be sperm from a partner or donor. The pregnancy rate can vary once the embryo is thawed and implanted.

In either case, there are costs for the stimulation and collection of the eggs, fertilization, storage, thawing, sperm donation, and implanting in the future. Insurance companies may cover some of these costs.

**Oophoropexy (Ovarian Transposition)**

Oophoropexy is a surgery to move one or both ovaries and fallopian tubes to a different part of the abdomen. This is done to lessen the ovaries’ exposure if pelvic radiation is needed. This is often done along with surgery that is being done to treat the cancer, but can be performed laparoscopically for women who do not need other surgery. Women have been able to conceive after this procedure, but in some cases a second procedure is needed to return the ovary to its normal location, particularly when in-vitro fertilization is needed. The cost for oophoropexy can vary depending on the surgery or procedure used.

**Ovarian Tissue Freezing**

Using a laparoscopic surgery, all or part of one ovary is taken out before the start of therapy. The outer surface of the ovary contains the eggs, and it is this area that is frozen for future use.

There are several ways to use this tissue. Ovarian tissue can be implanted back into the woman (called auto-transplant), either orthotopically (in the same location it was taken from) or heterotopically (in a different location, for example, the forearm). After implantation, the tissue matures and oocytes can be collected and used through in-vitro fertilization procedures.

A number of pregnancies have come from using frozen tissue, but this technique is still relatively new. It is not an option for some types of cancer, including leukemias, due to the risk of the cancer being present in the tissue. Many fertility clinics offer ovarian tissue freezing, but you should look into the cost and understand the limited experience with this technique.

**Radical Trachelectomy & Conservative Surgery**
Radical trachelectomy is a procedure used in the treatment of cervical cancer, as an alternative to the more standard surgical treatment of hysterectomy. Trachelectomy removes the cervix but leaves the uterus intact. These women will need cerclage to carry a pregnancy (a technique to stitch the uterus closed to prevent premature birth or miscarriage). There is still a risk of premature deliveries or late miscarriages, and women may need IVF because of trouble getting pregnant due to the lack of a cervix. These pregnancies are thought to be high-risk, and will need a C-section for delivery due to the cerclage and the lack of a cervix.

There are other types of conservative surgeries that can be used for certain types and stages of gynecological cancers. Speak to your surgeon about what options you have for preserving fertility.

**Ovarian Suppression**

Ovarian suppression, also known as gonadoprotection has been used. This works on the theory that the cells in the ovaries are harmed by chemotherapy because they are quickly dividing and reproducing. By giving medication that temporarily shuts down the ovaries, they might be protected from the damage of chemotherapy. This can be done with long-acting hormone medications called gonadotropin-releasing hormone (GnRH) agonists. This method may help maintain fertility for some women, but the research has not found it to improve pregnancy rates. This treatment is considered experimental at this time. It may be used when other options are not available in the hopes of reducing the risk of infertility.

**Financial Issues**

Fertility-preserving techniques for women can come at a major cost. Many patients will not have coverage for fertility-sparing procedures through their health insurance. The National Infertility Association has a website that includes up-to-date information on each state’s laws. Women should talk to their insurance companies or human resource representatives to explore what is covered.

**The Future**

We have a long way to go in helping women facing cancer therapy to preserve their fertility. The future may see advances in tissue cryopreservation or new techniques to protect the ovaries and gynecologic organs from the damage of current therapies. A first step is making sure women know the options available to them. Have an open conversation with your providers regarding your wishes concerning your fertility. You can also learn more about how your treatments can affect your fertility and find links to resources for more information.