Ovarian Cryopreservation and Transplantation: Expanding Existing Techniques to Fertility Preservation for Female Cancer Patients

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Young Clinician Award 2008

Investigator Profile

Education
- BS, Massachusetts Institute of Technology
- MD, Columbia University

Clinical /Professional Appointment
- Attending, Gynecology, Newton-Wellesley Hospital
- Associate Medical Director, Minimally Invasive Gynecologic Surgery Center, Newton-Wellesley Hospital

Recent Honors and Awards
- CIMIT Clinical Fast Forward
- Berlex Faculty Development Workshop
- Society of Laparoendoscopic Surgeons Outstanding Resident Award, BWH / MGH
- Harvard Medical School Class of 2003 Resident Teaching Award

Impact on Care

- Approximately 55,000 women under the age of 35 were diagnosed with cancer in 2005
- Existing options for preservation of fertility for young girls and women are limited
- Current options, embryo cryopreservation, and cryopreservation of unfertilized oocytes, have several limitations
- As of 2008, this therapy is not offered at any institution in New England
- This technique, ovarian tissue cryopreservation, is an investigational technique that does not require a sperm donor or ovarian stimulation
- Though less than 20 procedures have been performed since 2000, there have been several reports of pregnancy and no reports of recurrence of cancer

Abstract

The treatment of cancer with chemotherapy or radiation can lead to iatrogenic infertility. The options for women to preserve their fertility during this treatment are limited, complex and often expensive.

The overall vision is to be able to offer the option of ovarian cryopreservation to women undergoing cancer treatment with a high risk of ovarian failure due to their treatments. To set up a program such as this is a long-term goal that will likely take many years to establish. Several initial goals must be achieved prior to being able to offer this technique to patients, including development of minimally invasive ovarian harvesting and re-transplantation surgical techniques, establishing and improving existing tissue cryopreservation and thawing protocols, and creating an IRB-approved protocol through which to recruit patients.

The goal is to collaborate with laboratory researchers on the cryopreservation and thawing techniques of ovarian tissue, as this is paramount to the success of the treatment. By providing the laboratory with fresh ovarian tissue (from premenopausal patients undergoing oophrectomy for benign indications) we would first attempt the techniques that are currently being used and then improve, if possible, existing techniques of cryopreservation and tissue thawing.

Award made possible through the support of: Johnson & Johnson