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OPTIMAL BREAST CANCER CARE

“The complications in the treatment of young women with breast cancer”

James R. Waisman, MD  
Breastlink Medical Group  
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Breast Cancer Treatment and Side Effects

- Local regional – surgery radiation
- Systemic – chemotherapy, hormonal therapy
- Psychological – premature menopause (vasomotor, sexuality, bone health, cardiovascular), infertility

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American Society for Clinical Oncology  
Recommendations for Fertility  
Preservation

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- Assessment of risk for infertility
- Communication with patient
- Patient at increased risk for treatment induced infertility
- Patient interested in fertility preservation options
- Refer to specialist with expertise in fertility-preservation methods

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Patient eligible for proven fertility preservation methods

- Embryo cryopreservation
- Patient eligible for investigational fertility preservation techniques
  - Cryopreservation of eggs
  - Ovarian suppression
  - Cryopreservation of ovarian tissue

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Why is infertility an increasing concern?

- 25% of breast cancer cases occur before the age of menopause
- 15% occur in women <45 years of age
- Increasing number of women who delay childbirth >35 years of age
- Increasing survival rates

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- Based on recent report, 29% of women said that infertility impacted their decision making regarding the treatment of their breast cancer

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### Factors Affecting Infertility

- Age of patient
- Cumulative dose and type of chemotherapy
- Method of administration – intravenous or oral
- Status of pre-treatment fertility

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### Definition of Infertility:

- The inability to conceive after one year of intercourse without contraception.

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### Factors compromising fertility:

- Fertility is compromised by chemotherapy by decreasing the number of primordial follicles by creating hormonal imbalance
- Fertility is compromised despite the maintenance or resumption of menses after treatment.

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### Best measures of the predictors of fertility.

- Best measures of the predictors of fertility are not menses but rather specific hormonal relationships.
- FSH and Estradiol on day 2 and 3 are the best measures of ovarian reserve.

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- If FSH is greater than 40 – measure twice, this confirms menopause.
- An FSH greater than 12 on day 3, suggests impaired fertility.
- An estradiol greater than 75 on day 3, suggests impaired fertility.
- New markers of fertility include measurement of: anti-mullerian hormone, inhibin-B, antral-follicle counts on day 3 measured by ultrasound.

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### Common chemotherapy regimens and the relative risk of infertility

- Highest risk: alkylating agents in women > 40 years of age
  - CMF, FEC and FAC

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- Intermediate risk: alkylating agents in women ages 30-39 years of age OR
  - Adriamycin and cytoxan (AC) in women > 40 years of age

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### Uncertain risk: taxanes

- Recent study of TAC showed a 51% risk of amenorrhea vs. 33% for FAC in age adjusted comparative treatment groups.

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### ASCO Guidelines – Points of Discussion between the patient and physician

### Fertility Preservation methods in cancer patients (with specific reference to breast cancer)

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- “Cancer and cancer treatments vary in their likelihood of causing infertility. Individual factors such as disease, age, treatment type and dosages, and pre-treatment fertility should be considered in counseling patients about the likelihood of infertility.

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- Patients who are interested in fertility preservation should consider their options as soon as possible to maximize the likelihood of success. Some treatments are dependent upon the phase of the menstrual cycle and can only be initiated at monthly intervals. Discussion with reproductive specialist and review of available information from patient advocacy resources, e.g., the Susan G. Komen Breast Cancer Foundation, can facilitate decision making and treatment planning.

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- The method of fertility preservation with the highest likelihood of success is cryopreservation of embryos.
- At this time (2006), other approaches should be considered investigational.
- Data are very limited but there appears to be no detectable increased risk of disease recurrence associated with most fertility preservation methods and pregnancy even in hormonally sensitive tumors.

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- Aside from hereditary genetic syndromes and the in utero exposure to chemotherapy, there is no evidence that a history of cancer, cancer therapy or fertility interventions increases the risk of cancer or congenital abnormalities in the progeny.
- Treatment related infertility may be associated with psychosocial distress and early referral for counseling may be beneficial in moderately distressed people.”

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### Fertility preservation

#### - Embryo cryopreservation

- Embryo Cryopreservation requires two weeks of ovarian stimulation.
- Daily FSH is given from the onset of menses.
- Follicle development monitored by ultrasound and blood test. HCG is given to start ovulatory cascade.
- Eggs are fertilized in vitro.

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- Tamoxifen or letrozole given with FSH to lower estrogen exposure.
- Live birth rates depend on the patients age and the number of embryos frozen.
- There is no insurance benefit for this procedure.
- Success rates vary with implantation rates between 8 and 30% and successful pregnancy rates of those implanted of up to 60%.

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### Investigational procedures

- Egg cryopreservation – less successful because of fragility of eggs. There have been about 120 deliveries reported as of 2006.
- Ovarian cryopreservation and ovarian cryopreservation with transplantation.
- 2 live births reported as of 2006.

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- Ovarian suppression – use of GNRH analogs (leuprolide). Limited data, trials ongoing, small series reported. Potential increased risk of miscarriage.
- Because of limited data and limited centers of expertise, as much as possible. Women should be encouraged to participate in clinical trials and research.

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## A Focus Group of 15 Young Women (Pointing new directions for research)

Identified points of vulnerability:

- The ultimate catch-22: Survival versus Procreation
- Fertility and infertility is an unexplored area of patient and partner distress that profoundly impacts sexuality and procreative expectation and, sometimes, grief and recovery

Additional areas of concern include:

- Caregiver/partner distress – detachment of the partner post treatment
- Impact on small children
- Partner role reversal
- Intimacy – emotional, physical, mental and sexual
- PTSD – patient and partner
- Depression - endogenous and situational
- Martial distress and risk
- Sexuality and body image