



Original research article

Contraceptive counseling in reproductive-aged women treated for breast cancer at a tertiary care institution: a retrospective analysis

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Abstract

Objective: The objective was to assess the frequency of documented contraceptive and fertility preservation counseling for women treated for breast cancer.

Study design: We conducted a chart analysis of female breast cancer patients ($n=211$) ages 18–45 years receiving chemotherapy treatment at Stanford Comprehensive Cancer Center from 2010 to 2014. Primary outcomes of contraceptive counseling and fertility preservation counseling documentation were assessed for frequency. Secondary outcomes included pregnancy testing, contraception use and pregnancy during treatment.

Results: Among the total sample ($n=211$), sexual activity was documented in 24% of patients ($n=51$). Fifty-one percent ($n=108$) of patients received pregnancy testing prior to initiation of treatment. Past contraception use was documented in 74% of patients ($n=156$) and current contraception use in 25% ($n=53$). Twenty-six percent of patients received fertility preservation counseling alone ($n=54$), 10% received contraceptive counseling alone ($n=22$), and 12% received both types of counseling ($n=25$). Patients were three times more likely to receive contraceptive counseling if using contraception at diagnosis [odds ratio (OR) 3.1, confidence interval (CI) 1.1–9.1, $p=.04$], and older women were significantly less likely to receive counseling (OR 0.2, CI 0.1–1.0, $p=.04$). Two patients became pregnant and had an abortion during treatment (1%), and neither patient was using contraception nor received contraceptive or fertility preservation counseling.

Conclusions: Documentation of fertility preservation counseling occurs more frequently than contraceptive counseling, but both occur suboptimally. Lack of documentation does not allow us to conclude that counseling did not occur, but it suggests the need to improve documentation and increase awareness of contraceptive needs and counseling.

Implications: Women undergoing breast cancer treatment do not consistently receive counseling on contraception or fertility preservation as a part of their care. Efforts are needed to ensure that women treated for breast cancer routinely receive counseling about fertility preservation and contraceptive options.

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Keywords: Contraception; Fertility preservation; Counseling; Chemotherapy; Breast cancer

1. Introduction

In 2014, an estimated 87,920 women in the United States under the age of 45 were newly diagnosed with cancer [1]. Treatment options for cancer include some of the most potent human teratogens, chemicals that may cause structural and

functional birth defects, particularly if taken during early pregnancy [2]. Prevention of fetal exposure to chemotherapeutic agents is complicated by the fact that nearly half (45%) of pregnancies in the United States were unplanned in 2011 [3]. This most recent figure demonstrates a decline from the reported 51% unintended pregnancy rate in 2008 [4]; however, unintended pregnancy remains a pertinent issue. By age 45, more than half of women in the United States will experience an unintended pregnancy [5]. Given our knowledge of the teratogenic potential of chemotherapeutic agents and the high rates of unintended pregnancy in the United States, pretreatment discussions of pregnancy

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prevention options are crucial for patients diagnosed with cancer.

Since 2006, a number of guidelines have been released emphasizing the importance of fertility preservation in oncology practice [6–8]. Even with these guidelines, studies have widely demonstrated substandard rates of fertility preservation counseling [9–13] and low rates of referral to gynecologists or reproductive endocrinologists [14,15] for patients diagnosed with cancer. Notably, fertility preservation counseling is considered a separate entity from contraceptive counseling; fertility preservation counseling focuses on the potential of chemotherapy to decrease or eliminate fertility, whereas contraceptive counseling recognizes the continued potential to become pregnant while on chemotherapy and focuses on the importance of avoiding pregnancy during treatment. The focus on fertility preservation neglects other reproductive health issues important to patients with cancer, such as avoiding unintended pregnancy during treatment, and may affect the perception that contraception may seem unnecessary during cancer treatment. Although cancer treatment reduces fertility [16,17], it does not preclude pregnancy [18]. An estimated 1 in 1000 pregnancies is complicated by cancer, a number that is expected to rise as women delay childbirth until the fourth and fifth decade of life [19]. Pregnancy during treatment may result in induced abortion or continuation of a pregnancy with potential teratogenic exposure [18,20,21]. The Society for Family Planning released guidelines for physicians to prescribe contraception appropriate to cancer patients [22], but whether patients with cancer actually receive contraceptive counseling is largely undocumented.

Based on these prior studies, we identified a need to evaluate rates of contraceptive counseling during cancer treatment. This chart analysis assessed the frequency of documented contraceptive counseling versus fertility preservation counseling for reproductive-aged women treated for breast cancer, and identified patient characteristics associated with receiving counseling.

2. Project design and methods

This chart analysis assessed the frequency of documented contraceptive counseling and fertility preservation counseling for women of reproductive age undergoing chemotherapy treatment for breast cancer. Institutional Review Board approval was obtained at Stanford University, and data were collected from the electronic medical records (EMRs) of female patients ages 18–45 years treated with chemotherapy at Stanford Comprehensive Cancer Center from 2010 to 2014. The study population excluded patients without childbearing potential from hysterectomy and/or oophorectomy, as well as patients with prior tubal ligation and partner vasectomy and patients who were pregnant prior to the start of chemotherapy. Patients who declined chemotherapy, had previous cancer treatment or received outside treatment were

also excluded due to the potential for contraceptive counseling that would not be captured in our records.

2.1. Data collection

Patients meeting inclusion criteria were selected from the Stanford Cancer Institute Research Database, and EMRs corresponding to each patient were individually reviewed, including the full text of all notes, from diagnosis date to date of initial chemotherapy treatment. Primary outcomes included frequency of contraceptive counseling and fertility preservation counseling. Secondary outcomes included sexual activity, pregnancy testing, contraception use and pregnancy during treatment. Additionally, we collected demographic information including age, race, ethnicity, insurance coverage, marital status and parity, and factors related to cancer treatment, including cancer stage, participation in a clinical trial and use of tamoxifen, a chemotherapeutic agent that is particularly well known for its teratogenicity [23].

Records were evaluated from diagnosis date to date of initial chemotherapy treatment. For this study, we considered documentation of pregnancy testing, sexual activity and contraception use, and provision of counseling on contraception and fertility preservation options to be a standard of reproductive care that should be administered to all patients prior to chemotherapy treatment. On the basis that patients should receive resources necessary for appropriate reproductive health care prior to receiving chemotherapy, documentation of pregnancy testing, sexual activity, past contraception use, current contraception use, placement of an IUD or implant, fertility preservation counseling and contraceptive counseling must have been evident in the EMR prior to the date of initial chemotherapy treatment to be considered effective documentation.

Contraception included all medically recognized forms of contraception, including barrier methods such as condoms, hormonal methods such as oral contraceptive pills, patch, ring, and intrauterine device (IUD) or implants (note that we were not able to distinguish between copper IUD, hormonal IUD or implant placement in this study). Past and current contraception use was documented separately in the EMR because past use was included in risk factor screening for breast cancer. Sexual activity was documented in the EMR by presence or absence of current activity without specification of heterosexual or homosexual activity. Frequency of any pregnancy during treatment and pregnancy outcome were noted. Evidence of contraceptive counseling and fertility preservation counseling was based on referral to a gynecologist or reproductive endocrinologist, respectively, or documentation in the notes. Documentation in the notes was assessed by free text search using the following terms: counsel, counseling, counseled, birth control, contraception, contraceptive(s), oral contraceptive(s), OCP, pregnancy, protection, condom(s), LARC, Mirena, IUD, parity, children, abortion(s), termination, sexual activity, fertility, egg, preservation. Free text search was used to identify specific

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