

Original research article

Contraception and reproductive counseling in women with peripartum cardiomyopathy^{☆,☆☆}

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Abstract

Objectives: Pregnancies following a diagnosis of peripartum cardiomyopathy (PPCM) are associated with increased risk for maternal morbidity and mortality. Yet patterns of contraceptive use and reproductive counseling have received little attention. This nationwide registry-based study sought to evaluate patterns and clinical characteristics associated with contraceptive use, and examine the prevalence of contraceptive counseling in women with PPCM.

Methods: From December 2015 to June 2016, 177 PPCM patients (mean age of 34.8±5.7 years, median time since diagnosis of 3.0±4.3 years) completed questionnaires about contraceptive use and counseling at registry enrollment. *T* Tests, chi-square and logistic regression were used to compare demographic and clinical characteristics among women who reported contraceptive use vs. nonuse.

Results: Tubal ligation (24.3%), condoms (22.0%) and intrauterine devices (IUDs; 16.4%) were the most common forms of contraception. Among sexually active women, 28.9% reported contraceptive nonuse. Contraceptive users had a lower body mass index higher education, and were less likely to be in a dating relationship, have hypertension, wear an external cardioverter–defibrillator, and use antihypertensive medications compared with nonusers (all *p*<0.05). Two-thirds of women received counseling about risks of subsequent pregnancies and contraceptive strategies.

Conclusions: This preliminary study indicates that 1 in 4 PPCM patients are sexually active and are not using contraception to prevent PPCM recurrence. Although a majority of women did receive reproductive counseling, as many as 25% of patients reported no discussion of contraceptive strategies to prevent unintended pregnancy and heart failure relapse.

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1. Introduction

The prognosis of Peripartum Cardiomyopathy (PPCM), a potentially life-threatening form of heart failure that develops in young women during pregnancy and up to

6 months postpartum, has improved significantly over the last decade [1,2]. Although relatively uncommon, the incidence of PPCM in the United States is increasing (1 in 1000 to 4000 births each year) and disease-specific guidelines have not been developed to address the late and long-term side effects of this condition [2]. Given the young age and reproductive status of these patients, a desire for future biological children may be an important quality of life concern for survivors. Because subsequent pregnancies are associated with considerable risk for PPCM recurrence [2], women may be advised to avoid pregnancy, and contraception is presumably recommended to prevent future pregnancies [3]. However, whether PPCM patients receive routine counseling about the risks of subsequent pregnancies and

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contraceptive strategies is unknown. The available information on patterns of contraceptive use is also limited [3,4].

The purpose of this study was to examine patterns and clinical characteristics associated with contraceptive use, and to evaluate the prevalence of contraceptive counseling in a large, nationwide registry-based cohort of women with PPCM.

2. Materials and methods

2.1. Study overview and patient recruitment

Participants were women with self-reported PPCM diagnoses consecutively enrolled in the Peripartum Cardiomyopathy Quality of Life Registry (PC-QoL), a national, web-based registry developed to study health-related quality of life outcomes in women with PPCM. The registry collaborated with an established patient education website, www.mysistersheart.com, to identify women with a history of PPCM. Recruitment was limited to women visiting this website and the current study included all women enrolled in the registry. Interested women clicked on the registry link to learn more about the study and enroll in the registry. Women provided informed consent via electronic signature prior to study enrollment. At the time of enrollment, women completed questionnaires about their medical history, reproductive behaviors, psychological adjustment, functional status and quality of life. According to registry enrollment data, PPCM patients from 27 states participated in the registry. Inclusion criteria were age 18 years and older, prior diagnosis of PPCM, English fluency and access to the internet. All study procedures were approved by the institutional review board at East Carolina University. Women did not receive any compensation for their participation in the study.

2.2. Measures

We used standardized questionnaires to collect socio-demographic information and medical history. We used a survey modeled after the Contraceptive Use Questionnaire from the Women's Interview Study of Health [5] to obtain information regarding reproductive history and contraceptive use.

A 3-item measure developed for the current study assessed contraceptive issues and history of contraceptive counseling. Specific items (yes/no answers) included the following: (1) "I want to have more biological children"; (2) "I had a discussion with my healthcare providers about the risks associated with future pregnancies"; and (3) "I had a discussion with my healthcare providers about the importance of contraception to prevent PPCM recurrence."

Because depression has been associated with increased risk for inconsistent contraceptive use among healthy women in general population [6], we examined the extent to which depression affects contraceptive use in PPCM patients using the Patient Health Questionnaire Depression Scale (PHQ-8),

an 8-item screening tool validated in heart failure and perinatal populations [7,8]. A score ≥ 10 indicated clinically significant symptoms of depression [9].

2.3. Statistical analysis

To characterize patterns of contraceptive use and counseling in women with PPCM, we calculated prevalence rates for contraceptive methods and contraceptive counseling. We also calculated the proportion of women sexually active 3 months prior to study enrollment. "We then categorized patients based on the frequency of self-reported contraceptive use: we considered those who reported contraceptive use at least "half of the time" or more to be "contraceptive users", whereas "non-users" were women who reported using contraception "never or rarely"." We compared demographic and clinical characteristics among contraceptive users vs. nonusers using *t* test, chi-square and logistic regression. For all estimates, we considered *p* values $< .05$ to be statistically significant. We conducted all analyses with SPSS version 22.0 (SPSS Inc., Chicago, IL, USA).

3. Results

During the 6-month recruitment period (December 2015 to June 2016), 177 PPCM patients enrolled in the PC-QoL Registry. At enrollment women had a mean (M) age of 34.8 ± 5.7 years, and were more likely to be white, married, overweight, to have a family history of cardiovascular disease (CVD), to be treated for heart failure, and were not receiving disability insurance (Table 1). A majority of PPCM patients were sexually active in the month prior to registry enrollment (86.4%).

Characteristics of the index PPCM pregnancy are shown in Table 2. A majority of women were multiparous (mean number of pregnancies prior to PPCM diagnosis was 2.7 ± 1.7) and received a diagnosis of PPCM postpartum. The median time since diagnosis was 3.0 years (SD=4.3); 27.0% of patients enrolled in the registry within 12 months of their diagnosis. During the index pregnancy, women frequently experienced preeclampsia (37.6%), labor and delivery complications (31.7%), and neonatal complications (14.1%–25.8%). Subsequent pregnancies occurred in 19.1% of women.

3.1. Patterns of contraceptive use

Among contraceptive users (contraceptive use half of the time or more) in this PPCM cohort, 48.2% reported regular use of contraception to prevent future pregnancies, while 15.0% of women reported using contraception at least half of the time or most of the time. Contraceptive nonuse was reported by almost a third of PPCM patients who "never or rarely" use contraception to prevent future pregnancies (28.9%). At the time of enrollment, all contraceptive nonusers were sexually active.

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