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Factors influencing fertility-sparing treatment for gynecologic malignancies: A survey of Society of Gynecologic Oncology members

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HIGHLIGHTS

- Number of reproductive aged women seen may influence fertility sparing treatment.
- Geographic region and practice setting also influences fertility sparing treatment.
- Most of the gynecologic oncologists felt collaborating with a RE was important.
- Collaboration can help optimize treatment planning for women considering a FST.

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ABSTRACT

Objectives. This study aims to examine practice patterns of gynecologic oncologists (GO) regarding fertility-sparing treatments (FST) for gynecology malignancies and explores attitudes toward collaboration with reproductive endocrinologists (RE).

Methods. An anonymous 23-question survey was sent to 1087 GO with a 14.0% completion rate. Descriptive statistics, Fisher's exact test, and Chi-square tests were used for data analysis.

Results. The majority of GOs offer FST for gynecologic malignancies. Providers seeing larger numbers of reproductive age women were more likely to consider cancer prognosis ($p < 0.03$) and cancer stage ($p < 0.01$) as key factors. Providers in the Midwestern US considered socioeconomic status more often when offering FST than those in the South ($p < 0.04$). Those practicing in urban settings were more likely to feel that collaborating with a RE prior to treatment could improve treatment planning for women considering FST ($p < 0.02$). Finally, providers in urban or suburban areas more often felt collaboration with a RE improves pregnancy outcomes in women who pursue FST ($p < 0.01$, $p < 0.02$) compared to rural practitioners.

Conclusions. While FST offers women the chance to pursue pregnancy after cancer, there are minimal data on factors that influence whether FST is offered and if collaboration with a RE is sought in the management of these patients. The number of reproductive age women seen, geographic location, and practice setting are important variables that may influence current practice. Understanding these factors can help identify opportunities to improve oncologic and reproductive outcomes of this patient population.

1. Introduction

Advances in cancer treatment have increased the number of reproductive aged (RA) survivors, many of whom have questions and concerns about fertility and family planning. The American Society of Clinical Oncology (ASCO) recommends that providers discuss the risk of cancer-related infertility and refer patients who are interested in fertility preservation (FP) to reproductive specialists early in the course of treatment planning [1]. While practice guidelines encourage fertility counseling, there are limited data on the quality of these discussions. In addition, the type of information provided to patients is not well characterized and referral rates to reproductive endocrinologist remain low.

Fertility sparing treatments (FST) of early gynecologic cancers offer women the opportunity to preserve fertility potential while effectively treating their disease. However, as with other cancers, conservative management of gynecologic cancers may still negatively impact fertility and reproductive outcomes. For example, conservative surgical

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management of women with ovarian cancer may compromise ovarian reserve and women receiving trachelectomies for early stage cervical cancer may be at increased risk of cervical stenosis, preterm labor, and difficulties trying to conceive, even with assisted reproductive technology [2–4].

In addition, there may be comorbidities that warrant additional management, such as women with endometrial cancer who often present with anovulation and/or polycystic ovarian syndrome.

Because conservative management of early gynecologic cancers is viewed as "fertility-sparing", the need for comprehensive fertility counseling and evaluation by a reproductive endocrinologist (RE) is often overlooked. Gynecologic oncologists (GO) often perceive fertility counseling as a lower priority; lack of training in FP counseling, being pressed for time in clinic and unfamiliar with new national guidelines pertaining to FP are other reasons why infertility risks may be disregarded [5]. However, a RE can contribute to treatment planning by assessing a woman's baseline fertility status, making reasonable estimates of likelihood for successful pregnancy and live birth, and counseling patients on fertility treatments that may be needed in the future [4]. Lack of initiating the conversation about fertility goals at the time of diagnosis and not providing patients with quality discussions regarding FP may affect how patients choose treatment options [6,7].

The impact of potential cancer-related infertility has important implications for a patient's quality of life and survivorship experience. Discussions about fertility concerns prior to cancer treatment have been shown to decrease regret scores, whether a woman chooses to preserve fertility or not [8]. RA patients who receive a FST have been shown to have a reduced risk of regret about fertility goals [9]. Providing these patients options for fertility preservation has been proven to be worthwhile and safe [10]. FST in eligible patients has been shown to result in survival rates similar to conventional therapy [11–15].

The purpose of this study was to examine practice patterns of GOs with regard to FST of gynecologic malignancies and explore their attitudes toward collaboration with REs. The purpose of our study was to understand how FST practice tendencies varied amongst providers and examine their thoughts toward collaboration with REs. Understanding FST factors such as the size of the provider's practice, geographic region, and practice setting may identify opportunities to improve counseling and promote collaboration to optimize oncologic and reproductive outcomes in this patient population.

2. Materials and methods

The study was approved by the Institutional Review Board at The University of Texas MD Anderson Cancer Center. An anonymous 23-question survey was developed and tested by the study team (Appendix A). The survey was tested for face validity by administering it to ten gynecologic oncologists at our institution and eliciting their feedback about the clarity and appropriateness of the questions. The survey was reiteratively edited until the majority agreed on wording. Once finalized, it was sent by email to Full and Candidate members ($N = 1087$) of the Society of Gynecologic Oncology (SGO); the only inclusion criteria were that participants must be a GO and a member of SGO. A free text area was provided where participants could leave comments. The study data were collected and managed using REDCap™ (Research Electronic Data Capture) tools hosted at MD Anderson [16]. Descriptive statistics, Fisher's exact test, and Chi-square tests were used for data analysis.

3. Results

3.1. Demographics

A total of 163 surveys were received. Of the surveys received, 152 were eligible for inclusion, yielding a completion rate of 14.0% (152/1087). Data analysis was restricted to surveys that were partially (75% of the questions) or entirely completed. Table 1 shows the demographics of the GOs. The characteristics of the participants included a relatively even split of male and female providers, approximately 50% have been in practice for >10 years, providers seeing a wide range of RA women, and at least 75% solely work at or are affiliated with an academic institution. There was a broad but yet relatively even geographic distribution of GOs with the South reporting the highest percentage (33%); 27% of participants practice in the Northeast, 19.7% in the Midwest, 19.1% in the West, and 0.7% outside the United States. The majority of providers (70.2%) practiced in an urban setting while others were in a suburban (25.8%) or rural (4.0%) setting. Many of the GOs (84.2%, 128/152) are involved with training residents/fellows and 83.6% (107/128) reported that they incorporate lessons into their curricula about how to discuss fertility issues with patients diagnosed with a gynecologic cancer.

Table 1
Provider characteristics.

Variable	N	%
Sex (N = 146)		
Female	71	48.6%
Male	75	51.4%
Years in practice (N = 150)		
0–10	74	49.3%
11–20	36	24.0%
21–30	27	18.0%
31+	13	8.7%
Type of practice (N = 152)		
Private	25	16.4%
Academic	80	52.6%
Private + Academic	40	26.5%
Military	4	2.6%
Other	3	2.0%
Geographic distribution (N = 152)		
Northeast	41	27%
Midwest	30	19.7%
South	51	33.6%
West	29	19.1%
Outside US	1	0.7%

3.2. Assessment of fertility status, referral to a RE, and collaboration

Sixty-eight percent (68%) of GOs reported they always assess fertility status prior to initiation of cancer treatment while 18% "often" and 8.7% "sometimes" perform an assessment (Table 2). The method of fertility assessment reported varied amongst providers. Many GOs (74.2%) preferred using a reproductive specialist for this assessment (Table 3). However, when referring patients to a RE for FP counseling prior to offering a FST, only 16% of the GOs reported they "always" do this while 44% stated they "often" and 26% "sometimes" refer their patients

Table 2
How often do GOs assess fertility status? (N = 150).
How often do GOs refer to or consult a RE for FP counseling prior to offering FST? (N = 150).

Variable	N	%
Assessment of fertility status		
Always	102	68.0%
Often	27	18.0%
Sometimes	13	8.7%
Rarely	5	3.3%
Never	3	2.0%
Referral to RE		
Always	24	16.0%
Often	66	44.0%
Sometimes	39	26.0%
Rarely	19	12.7%
Never	2	1.3%

GO, gynecologic oncologist; RE, reproductive endocrinologist.

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