GYNECOLOGY

Referring survivors of endometrial cancer and complex atypical hyperplasia to bariatric specialists: a prospective cohort study

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OBJECTIVE: The purpose of this study was to describe the acceptability of bariatric referrals when offered by gynecologic oncologists to women with a history of complex atypical hyperplasia or early-stage endometrial cancer and to detail compliance with referrals and weight loss attempts that are initiated 3 months after the referral.

STUDY DESIGN: Obese women with complex atypical hyperplasia or early-stage endometrial cancer were approached for inclusion in this prospective cohort study. Those women who were not in the care of a bariatric specialist were offered a medical referral with or without a surgical referral. A survey was administered at inclusion and after 3 months.

RESULTS: Of 121 women who were approached, 106 women were consented. Women reported that it was acceptable for their gynecologic oncologist to discuss weight loss (91.09%) and that a 10% loss of body weight would be beneficial (86.14%). Six women were already in the care of a bariatric specialist. Of the remaining 100 women, 43 accepted a referral: 35 of 100 medical and 8 of 66 surgical referrals that were offered. At 3 months, 17 women complied with a referral (16 medical and 1 surgical), and 59 women had initiated any weight loss attempt. On multivariate analysis, a higher initial weight ($P = .0403$), Charlson Comorbidity Index ≥ 5 ($P = .0278$), and shorter time from surgery to bariatric referral ($P = .0338$) predicted acceptance of a referral.

CONCLUSION: Weight-loss counseling is well received by these women. After being offered bariatric referral, only 17% comply, but most women (59%) subsequently initiate a weight loss attempt. Referrals should be offered early in the course of cancer care to maximize acceptance.

Key words: bariatric referral, endometrial cancer, obesity, survivorship, weight loss

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More than two-thirds of endometrial cancer survivors are obese.[1,2] Despite excellent cancer-specific outcomes,[3] survivors of early-stage endometrial cancer experience poor general health outcomes and high mortality rates because of obesity-related comorbidities.[4,5] Over time, these women are more likely to die of cardiovascular disease than any other cause, including cancer.[4] Gynecologic oncologists desire to address obesity but report having received insufficient training.[6,7] Cancer survivors confirm that gynecologic oncologists rarely and inadequately address the issue.[8]

The Society of Gynecologic Oncology has joined ranks with other large medical organizations in calling on providers to address obesity actively with cancer survivors.[9] With aggressive nutritional and medical treatment obese endometrial cancer survivors can lose weight.[10] Bariatric surgery is associated with dramatic weight loss outcomes[11-20] but is understudied in this population. Gynecologic oncologists express interest in offering medical and surgical bariatric referrals to obese cancer survivors.[6,7] However, the acceptability of and compliance with these referrals has not been described in this setting.

Gynecologic oncologists are poised uniquely to harness the 'teachable moment' provided by a cancer diagnosis and have liberal access to women during the survivorship period, which is a time when women are motivated but experience distinct challenges to healthy weight loss. In this prospective cohort study, we offered medical and surgical bariatric referrals to women with complex atypical hyperplasia or stage I or II endometrioid endometrial cancers. We describe the acceptability of and

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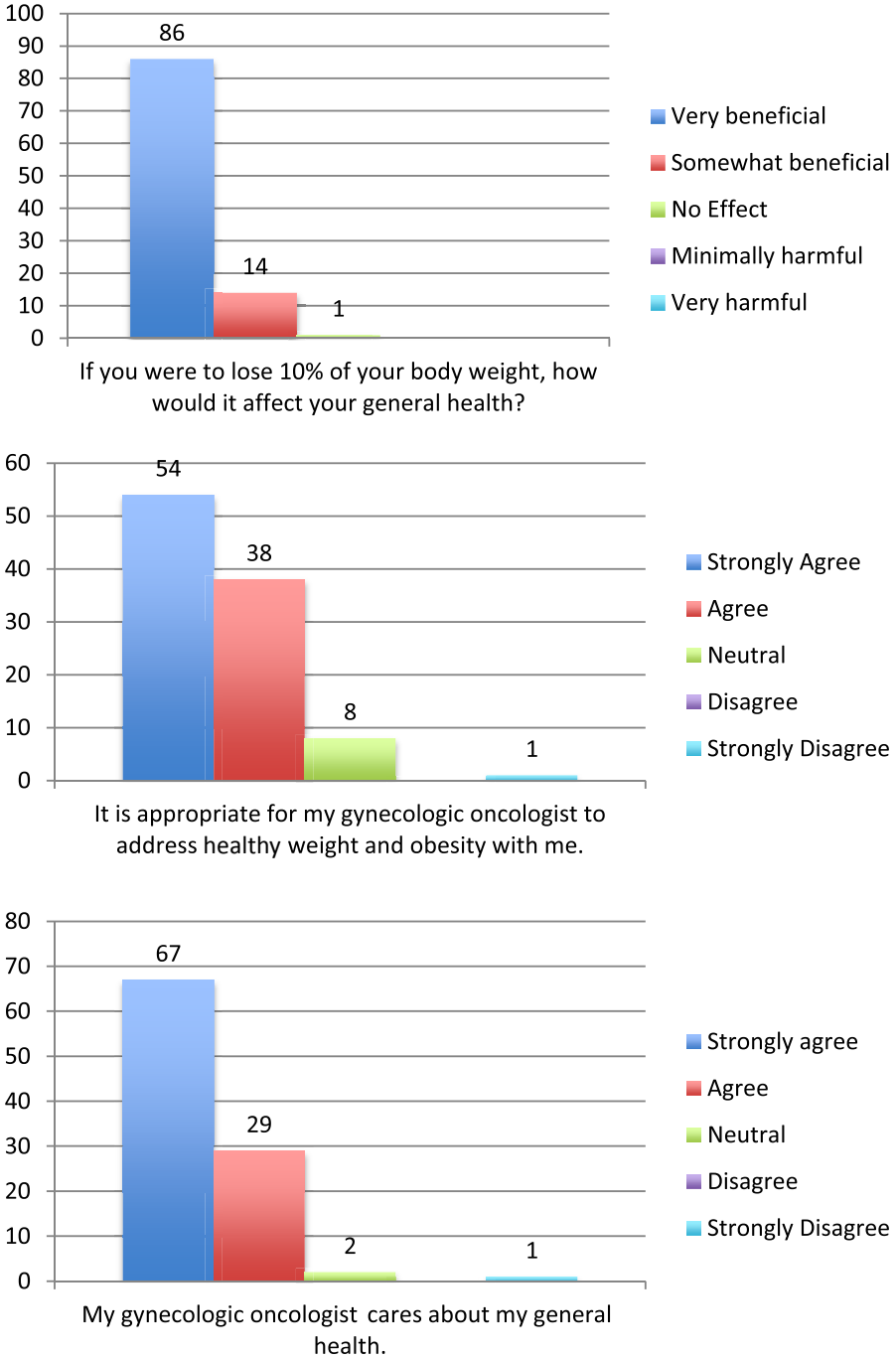
FIGURE 1
Baseline beliefs of obese women with complex atypical hyperplasia and early endometrial cancer



The 106 women who consented for participation believed that it was appropriate for gynecologic oncologists to address obesity and believed that a loss of 10% of their body weight would be beneficial.

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compliance with these referrals and detail weight loss attempts that are initiated within 3 months after the bariatric referral is offered. Additionally, we explore factors that are associated with the acceptability of and compliance with referrals and the initiation of weight loss attempts.

Materials and Methods

Institutional review board approval was obtained through the Cleveland Clinic (protocol # 13-1528) for this prospective intervention cohort study. Women were approached between December 2013 and September 2014 during gynecologic oncology clinic visits at Cleveland Clinic Main Campus, Hillcrest and Fairview Hospitals. Inclusion criteria were a history of complex atypical hyperplasia or a stage I or II endometrioid adenocarcinoma of the endometrium, 18-65 years old, a body mass index (BMI) $\geq$30 kg/m^2, and agreement of their gynecologic oncologist that they could be approached for enrollment. Exclusion criteria included stage III or IV, recurrent or progressive cancer, nonendometrioid histologic condition, poorly controlled psychiatric or medical conditions that contraindicate weight loss interventions, or an active second primary malignancy.

One of the authors (A.J.) identified potential subjects for recruitment in advance based on the inclusion and exclusion criteria that were mentioned earlier to minimize bias. The author and, occasionally research nurses at the remote sites, obtained consent and coordinated bariatric referrals, administered surveys, and collected data. Women who were already in the care of a bariatric specialist were surveyed but were not offered a referral. All other women were offered a medical referral with a bariatrician who specializes in medically supervised weight loss. Otherwise, women were offered a surgical referral if they met National Institutes of Health criteria for a bariatric surgery referral: BMI $\geq$40 kg/m^2 or $\geq$35 kg/m^2 with an obesity-related comorbidity.[21]

After informed consent was obtained, women were asked to fill out a questionnaire. Three items asked women to rate their baseline beliefs regarding the acceptability of a bariatric referral, the health benefits of modest weight loss, and their relationship with their gynecologic oncologist on a Likert scale (Figure 1). Baseline quality-of-life, function and symptoms were assessed