

Integrated health article

The prevalence of overweight and obesity in a breast clinic population: Consideration for weight loss as a therapeutic intervention

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Abstract

Background: Obesity is an important risk factor for breast cancer and weight loss may be associated with a decreased risk for breast cancer and its recurrence. We evaluated the prevalence of overweight, obesity, and obesity-related co-morbidities in a breast health clinic population to determine the potential need for weight loss intervention.

Methods: A retrospective review was conducted of sequential patients seen at a breast health clinic from July 1 to December 31, 2011. Body mass index (BMI), reason for visit (breast cancer diagnosis, high risk for breast cancer, or benign condition), and presence of obesity-related co-morbidities were recorded.

Results: The 302 patients who met inclusion criteria had a median age of 52 years (10–91) and median BMI of 26 kg/m² (15.4–56.5). Overall, 36.8% of patients had a BMI between 18.5–24.9 kg/m²; 32.1%, 25–29.9 kg/m²; 14.2%, 30–34.9 kg/m²; 8.3%, 35–39.9 kg/m²; and 4.3%, ≥40 kg/m². Overweight or obesity (BMI ≥25 kg/m²) occurred in 64.2% of breast cancer, 65.0% of high-risk, and 57.1% of benign patients (*P* value not significant). Criteria for bariatric surgery (BMI 35–39.9 kg/m² with ≥1 obesity-related co-morbidity or BMI ≥40 kg/m²) were met in 8.2% of breast cancer, 16.7% of high-risk, and 11.5% of benign patients (*P* value not significant).

Conclusions: Regardless of diagnosis, a significant proportion of patients visiting the breast health clinic meet criteria for weight loss intervention, including bariatric surgery. Weight management represents an underutilized therapeutic modality that could potentially decrease the risk of breast cancer and its recurrence, and improve overall prognosis. (Surg Obes Relat Dis 2014;10:348–354.) © 2014 American Society for Metabolic and Bariatric Surgery. All rights reserved.

Keywords:

Breast cancer; Increased risk for breast cancer; Obesity; Weight loss; Bariatric surgery

Breast cancer is the most common invasive cancer and the second most common cause of cancer death among women in the United States [1]. Multiple studies have found that obesity is associated with an increased risk for breast cancer, breast cancer recurrence, and overall poor prognosis [2–13]. Furthermore, increasing body mass index (BMI) has been implicated in worse overall and breast cancer specific

survival [14]. The American Cancer Society's Cancer Prevention Study II found that breast cancer mortality rates increased continually and substantially with increasing BMI (relative risk 3.08, 95% confidence interval, 2.09–4.51 for BMI ≥40.0 kg/m² compared with BMI 18.5–20.49 kg/m²). This study also found that approximately 30%–50% of breast cancer deaths among postmenopausal women were attributable to excess weight [14].

Studies have also shown a specific association between weight gain (independent of BMI) and risk for postmenopausal breast cancer, especially with estrogen receptor, progesterone receptor positive breast cancer [15–17]. The

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theory for this risk association is that adipose tissue in postmenopausal women becomes the main source of estrogen. Therefore, obese postmenopausal women have increased aromatization of estrogen, leading to greater levels of circulating endogenous estrogen, and potentially inducing more rapid growth of estrogen-responsive breast tumors [18–19]. Obesity-related diseases such as type 2 diabetes mellitus and metabolic syndrome have been associated with breast cancer as well. The mechanisms postulated include pathway activation of the insulin, insulin-like growth factor, and endogenous sex hormones [20–23].

Currently > two thirds of women in the United States are overweight (BMI 25.0–29.9 kg/m²) or obese (BMI ≥ 30 kg/m²) [24]. In 2009–2010, about 27.9% of women aged 20 and older were overweight, 35.8% were obese, and 8.1% were extremely obese (BMI ≥ 40 kg/m²) [25]. San Bernardino County, the county of residence of our patient population, is considered the fourth most obese region in the United States [26]. Given the epidemic proportions of overweight and obesity in the population, there has been strong focus to lower these rates through lifestyle modifications and intentional weight loss procedures. According to the National Heart, Lung, and Blood Institute Obesity Education Initiative, weight loss intervention begins with assessment of BMI, followed by diet, physical activity, and behavioral therapy interventions [27]. Although studies have shown both positive and negative associations between nonsurgical weight loss efforts and breast cancer risk, the American Cancer Society supports the position that weight loss and exercise can lower the risk of developing breast cancer [28–31]. However, for some patients, diet, exercise, and behavioral therapy may not be sufficient to result in both initial and sustained weight loss. Patients who have failed other weight loss attempts may be candidates for bariatric surgery [32]. According to the 1991 National Institute for Health (NIH) bariatric surgery guidelines, patients may be candidates for bariatric surgery if they have a BMI of 35–39.9 kg/m² with ≥ 1 obesity-related co-morbidity or a BMI ≥ 40 kg/m² [32]. Most recently, new bariatric guidelines advise that bariatric surgery also be offered to patients with a BMI of 30–34.9 kg/m² with diabetes or metabolic syndrome, although the evidence is limited [33].

Because of the association between obesity and breast cancer risk and outcomes, we sought to evaluate the prevalence of overweight, obesity, and obesity-related co-morbidities in a breast clinic population to determine the potential need for weight loss intervention.

Methods

A retrospective review of sequential patients who attended the university medical center's breast health clinic of a single breast surgeon from July 1 to December 31,

2011 was performed, as approved by the Loma Linda University Institutional Review Board. Patients were referred to the breast health clinic by their primary care physicians for breast-related concerns. The payor mix included Medicare, Medical, managed care, private, and self-pay. Each patient was included only once as a new or return patient, determined as the earliest clinic visit, with each subsequent visit falling within the study period excluded.

Body mass index, reason for visit (current or prior breast cancer diagnosis, high risk for breast cancer, or benign condition), and presence of obesity-related co-morbidities (diabetes, hypertension, sleep apnea, gastroesophageal reflux disease (GERD), hyperlipidemia, osteoarthritis, coronary artery disease, or fatty liver disease) were recorded. BMI was calculated using the online NIH BMI calculator according to height and weight at the clinic visit rounded to the nearest tenth. If the height and weight were not available, the height and weight from the closest available clinic visit or anesthesia record was used. The classification of weight using BMI is as follows: normal weight (BMI 18.5–24.9 kg/m²), overweight (BMI 25.0–29.9 kg/m²), obesity class I (BMI 30.0–34.9 kg/m²), obesity class II (BMI 35.0–39.9 kg/m²), and extreme obesity (BMI ≥ 40.0 kg/m²) [27]. If the patient had a history of breast cancer and was being seen for a new problem, the history of breast cancer was chosen. High risk was defined as having a modified Gail risk assessment score ≥ 1.66% at 5 years, significant family history of breast cancer, personal history of an atypical proliferative lesion on breast biopsy, or known or suspected BRCA mutation. Benign breast problems included abnormal breast imaging, benign mass, mastitis, and mastodynia. New nonepithelial breast malignancies (sarcoma, metastatic melanoma, metastatic ovarian cancer, or phyllodes tumor) were noted.

The demographic characteristics of patients who were normal weight were compared with those who were classified as overweight or obese (BMI ≥ 25 kg/m²). The proportions of patients who met NIH criteria for bariatric surgery (BMI of 35–39.9 kg/m² with ≥ 1 obesity-related co-morbidity or BMI ≥ 40 kg/m²) were evaluated by reason for visit. Statistical analyses were carried out using Number Cruncher Statistical System (NCSS) 2007 (NCSS Statistical Software, LLC, Kaysville, UT). Frequencies were calculated as appropriate to the data (analysis of variance, χ^2 test), and were based on a statistical significance level of $P < .05$.

Results

During the study period, 302 patients were evaluated. Most patients were Caucasian (60.3%), followed by 18.9% Hispanic, 8.9% black, and 8.9% Asian or Pacific Islander. Median age was 52 years (10–91). Patients with breast cancer comprised 41.1% of the population; high-risk,

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