**Introduction**

- Breast Conservation Therapy (BCT, lumpectomy followed by radiation therapy) is the preferred method of treatment for early stage breast cancer.
- Cosmesis after BCT has been shown to have a significant effect on patient psychological well-being and emotional distress.
- It has been suggested that when the Estimated Percentage of Breast Volume Excised (EPBVE) during BCT exceeds 10%, patient satisfaction decreases.
- BREAST-Q is a patient-reported outcome module encompassing 9 domains.

**Objective**

- The objective of this study was to determine the effect on QOL exerted by EPBVE for those undergoing BCT. We hypothesized that those with an EPBVE ≥10% would report lower satisfaction.

**Methods**

**Population**

- Patients from a prospectively maintained breast cancer database treated with BCT, stages 0-II, and with at minimum 1 year follow up, were evaluated after Institutional Review Board approval.
- Exclusion Criteria: incomplete records, bilateral disease, recurrence, death.

**Methods**

- These were mailed the BREAST-Q survey, introduction letter, and return envelope.
- If no response was received after 2 weeks, a second mailing and a follow up phone call ensued.

**BREAST-Q**

- Patients reported satisfaction and QOL in 9 domains: breast, sexual, radiating, psychological, physical, information, surgeon, medical team, and non-medical staff.

**Methods Continued**

**EPBVE**

- Excised Breast Volume (EBV) was estimated from surgical pathology reports. If additional margins were applicable, they were added to the EBV. EBV = π × r² × h, r (radial of specimen).
- EPBVE was calculated.
- Patients were grouped based on EPBVE ≤10% or EPBVE ≥10%.

**Statistics**

- Univariate analysis was performed utilizing two sample T-test and chi square tests.
- ANOVA was used to determine the effect of each parameter on EPBVE.

**Results**

- Of 290 patients, 77 met exclusion criteria.
- 213 patients were mailed the BREAST-Q survey. 104 (48.8%) responses were obtained.
- The EPBVE <10% group had 69 participants with a median EPBVE of 4.68%. The EPBVE ≥10% had 35 participants with a median EPBVE of 15.76%.
- Univariate analysis showed that the ≥10% EPBVE group had a larger number of ER positive tumors, and more patients receiving margin re-excision and radiation therapy. Otherwise, the groups were well balanced.
- Univariate analysis demonstrated a significant difference between the satisfaction domains of each group (P=0.04), with no significant difference in the rest of domains (Table 2).
- Using ANOVA, it was found that tumor location significantly affected satisfaction, with patients with lateral tumors being significantly less satisfied than those with medial tumors (p<0.02). No other parameter, including EPBVE, significantly affected breast satisfaction (Table 3).
- This study was limited by low survey response rates, as well as low response rates within some domains.

**Acknowledgements**

The American Society of Breast Surgeons Foundation Research Grant 2016

R25-CA134283 grant from the National Cancer Institute