The Impact of Receptor Status on Mastectomy Rates in Early Stage Invasive Breast Carcinoma
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Background

There is an established relationship between hormonal receptor (HR, estrogen and/or progesterone receptors), human epidermal growth factor receptor (HER2) status and locoregional recurrence.

Available data does not support including HR and HER2 receptor status among factors when deciding between breast conserving surgery (BCS) and mastectomy and contralateral prophylactic mastectomy (CPM).

The purpose of this study was to analyze how HR and HER2 receptor status influence the surgical management trends among women with early stage breast cancer.

Methods

The National Cancer Database was queried for women diagnosed with:
- cT1-cT3, cN0, cM0 breast carcinoma from 2004-2012.
- Patients were grouped based on receptor status and surgical management (BCS or mastectomy +/- CPM).
- Univariate and multivariate analyses were performed to investigate factors associated with increased odds of receiving mastectomy +/- CPM over BCS.

Results

- 280,241 patients met inclusion criteria.
- The following factors were associated with the receipt of mastectomy: younger age, Caucasian race, medical comorbidities, lower median household income, household distance from the treating center, larger tumors, invasive lobular histology, and higher tumor grade (each p < 0.001).
- Patients with HER2+ tumors (HR+/HER+ and HR-/HER2+) were the most likely to undergo mastectomy (OR 1.212 and 1.499 respectively compared to HR+/HER2- patients, each p < 0.001).
- HR status alone did not affect primary surgical management as patients with HR+/HER2- and HR-/HER2- tumors demonstrated similar mastectomy rates (p = 0.391).
- Patients with HR+/HER+, HR-/HER2- and HR+/HER2- patients were all more likely to receive CPM (OR 1.100, 1.142, and 1.192 respectively compared to HR+/HER2- patients, each p < 0.001).

Conclusions

- Women are more likely to undergo a mastectomy and contralateral prophylactic mastectomy if they have HER2+ tumors.
- The causes and clinical impact of this influence remain unclear, and further research into patient preference and patient education at breast cancer diagnosis will help to clarify this practice trend.