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Gender Differences and Survival Outcomes in Breast Cancer Patients: Stage Stratified Propensity Scoring Analysis of the National Cancer Database

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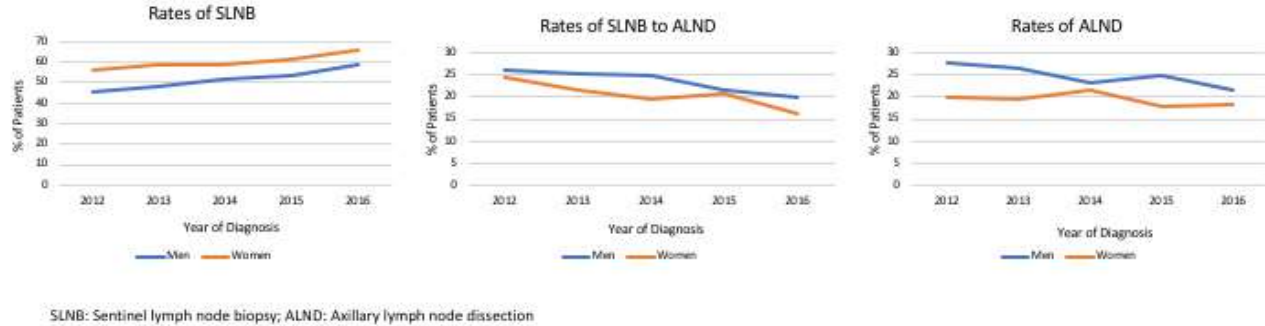
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surgery than women despite equivalent stage of disease, although ALND rates have decreased in both genders. Further education of surgeons regarding indications for axillary surgery in men is needed.

Figures: Trends in axillary surgery in men and in women from 2012 to 2016



787901 - Gender Differences and Survival Outcomes in Breast Cancer Patients: Stage-stratified Propensity Scoring Analysis of NCDB

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Background/Objective: There is limited research examining breast cancer gender differences. This study compares the trends and survival outcomes over the years between male (MBC) and female (FBC) breast cancer patients using the National Cancer Database (NCDB).

Methods: We retrospectively analyzed the NCDB registry for MBC and FBC cases diagnosed between 2004 and 2014. Patient demographics, tumor characteristics, overall mortality (OM), and trends were compared between MBC and FBC Patients. Univariate, multivariate, and propensity score weighted analyses were done to compare MBC and FBC.

Results: A total of 19,488 MBC patients (0.9%) and 2,138,730 FBC patients (99.1%) were identified. Median follow-up was 59.63 months. Compared with FBC group, MBC group was more likely to be older (Mean:64, SD:13 vs. Mean:60, SD 13.3), African American or non-Hispanic, have more comorbidities, and have a hormonally positive tumor with a higher stage at diagnosis (all $p < 0.001$). From 2004 to 2014, Stage II (1.21% to 1.34%- $p = 0.001$) and IV (0.88% to 1.43%- $p = 0.046$) diagnoses significantly increased more for MBC than FBC ($p < 0.05$). Surgery, radiation, and chemotherapy were used less in MBC regardless of stage (all $p < 0.001$). However, hormonal therapy was used more in MBC for Stages III and IV ($P < 0.001$). There was no significant change in 5-year overall survival from 2004 to 2010 for MBC (77.21% to 74.1%, $p = 0.13$), while FBC 5-year overall survival significantly increased (83.84% to 85.31%, $p < 0.001$). In the adjusted stage-stratified propensity score weighted analysis, there was a 21% lower hazard of OM in Stage 0 (HR:0.79; $p = 0.048$) and a 21% higher hazard of OM in Stage II (HR:1.21; $p < 0.001$) MBC cases compared to FBC cases. There was no statistical difference between MBC and FBC in OM for Stage I (HR:1.04; $p = 0.52$), III (HR:1.01; $p = 0.88$) or IV (HR:1.03; $p = 0.59$) cases.

Conclusions: Our data suggest that there are some significant differences in the trends and survival outcomes of MBC in comparison to FBC. This data may help identify the areas that need further research and care optimization for MBC.

787674 - Trends in Axillary Node Dissection Rates in Male Invasive Breast Cancer

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Background/Objective: Management of the axilla in invasive breast cancer (IBC) has shifted away from more radical surgery such as axillary lymph node dissection (ALND), towards less invasive procedures, such as sentinel lymph node biopsy. A previous study utilizing the ACS-NSQIP database showed an overall national downward trend in ALND procedures performed in women from 2007-2014. We hypothesize that there has also been a national downward trend in ALND procedures in the male population.

Methods: Male patients with invasive breast cancer were identified in the ACS-NSQIP database from 2007 to 2017. We included patients with ICD-9 and ICD-10 codes of malignant neoplasm of male breast. We then identified all patients with the following primary CPT codes: partial mastectomy with axillary lymphadenectomy (19302), modified radical mastectomy (19307), radical mastectomy (19305,19306), superficial axillary lymphadenectomy (38740), and complete axillary lymphadenectomy (38745). This number was divided by total cases of males with IBC reported in the NSQIP Database to give us the percentage of males with IBC undergoing these procedures by year. A Cochran-Armitage trend test was used to determine if there was any significant increase or decrease in the rate of ALND over the included years.

Results: A total of 200,132 patients were identified with IBC, 1.0% (2,024) of which were male with an average age of 64.9 year old, and 39.6% of all patients underwent ALND. The percentage of males with invasive breast cancer diagnoses undergoing axillary node dissection significantly decreased over the study period ($p < 0.001$), with an average decrease of 1.81% annually.

Conclusions: While de-escalation of breast and axillary management in female breast cancer patients has been reported over the years, the same has not been noted in the management of male breast cancer patients with mastectomy being more prevalent. Interestingly, this study has demonstrated that there is a national downward trend in ALND procedures in the men with IBC similar to women. Although, the average yearly decrease was lower than that previously reported in the female population (1.81% vs. 2.43%).