

Male Breast Cancer: 37-Year Data Study at a Single Experience Center in Turkey

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Introduction

Male breast cancer (MBC) is rare, accounting for less than 1% of all breast cancer and less than 1% of all cancer cases, with less than 0.5% of all cancer deaths in men, annually. MBC usually presents as a firm, painless mass along with palpable axillary nodes, nipple retraction, and ulceration of the skin at presentation. MBC is usually located in the subareolar region, but can also be seen in the upper outer quadrant. As is the case with women, the left breast is involved more predominantly than the right breast, and approximately 1% all of cases are bilateral. Approximately 90% of MBC are invasive ductal carcinomas. Lobular histology is rare, accounting for only 1.5% of MBC. MBC has high rates of hormone-receptor expression; approximately 90% express oestrogen receptor (ER), and 81% express progesterone receptor (PR).

Tumor size and lymph node involvement are important prognostic factors in MBC, as is for female breast cancer. There are no prospective randomized trials comparing the efficacy of different treatment options for MBC. The standard surgical approach for localized MBC is a modified radical mastectomy (MRM), but as with women, retrospective studies suggest that equal effectiveness can be achieved with a radical mastectomy, MRM, or simple mastectomy in terms of local recurrence and survival. There is limited data regarding the indications for post mastectomy radiation therapy (RT) in men treated for breast cancer; the recommendation is to follow the same guidelines as for women. Post mastectomy RT appears to reduce loco regional recurrence in MBC; however, the influence on survival is unknown. Many retrospective studies have evaluated the role of adjuvant hormonal therapy, and these studies have revealed that most male patients can benefit from adjuvant tamoxifen in terms of recurrence and death.

Adjuvant chemotherapy has been used to treat male and female patients with substantial risks of recurrence and death from breast cancer. Whereas the data supporting adjuvant chemotherapy in women is strong, there is little information on the effectiveness of adjuvant chemotherapy for MBC.

The aim of this study is to evaluate the effects of prognostic factors on overall survival (OS) and loco regional control (LC) among MBC patients treated at our institution over a 37-year period as well as to review the related literature.

The data of patients treated for MBC at the Istanbul University Cerrahpasa Medical Faculty and Hospital from 1973 to 2010 are retrospectively reviewed. Patient demographic and clinical information including the date of diagnosis, treatment, clinical course, and the date and causes of death are routinely recorded. The staging was made according to the American Joint Committee on Cancer (7th edition). Immunohistochemical method was used in the examination of estrogen and progesterone receptors. Antigen retrieval was made using high-pressure heat. Monoclonal mice ant estrogen protein antibody (Neomarks, Clone SP1, in 1/400 dilution) and monoclonal mice

ant progesterone protein antibody (Novo Castra, 1A6, in 1/100 dilution) were administered. Intra nuclear staining in the cells was expressed as the percentage of stained cells; $\geq 1\%$ staining was defined as positive. The evaluation of c-erbB-2 positivity was based on the guidelines of American Society of Clinical Oncology (College of American Pathologists).

Study procedures

The following information was retrieved from patient charts: medical history, physical examination, patients' age at diagnosis, laterality, tumor grade (low, intermediate, or high), tumor histology, and tumor size. In addition, chest wall muscular involvement, nipple, breast, or skin invasion, stage, axillary lymph node status, and hormone receptor expression were noted. The surgical procedures, adjuvant chemotherapy, radiotherapy, and hormonal therapy applied to patients were also documented.

Statistical analysis

Categorical and continuous variables were summarized using descriptive statistics (e.g., median, range, frequency, and percentage), and were compared using the chi-square or Fisher's exact test and Mann-Whitney U tests, respectively. The LC, DFS, and OS rates were estimated by the Kaplan-Meier method. The effects of clinical variables on the LC and OS were assessed by the univariate analysis. The log-rank test was used to compare the curves for the univariate analysis. All variables that were significant in the univariate analysis were entered into a multivariate analysis. In backward, stepwise fashion, the significant univariate variable with the least significance was eliminated from the multivariate model. This process was continued until only the significant variables remained. We performed a multivariate analyses using a Cox proportional hazard model in order to calculate the hazard ratio as well as the 95% confidence intervals. The statistical level of significance was defined as $p < 0.05$. All analyses were performed using the SPSS version 15.0 (SPSS Inc., Chicago, USA) software.

Survival and univariate analysis

All 86 patients were enrolled in our survival analysis study, with a median follow-up duration of 66 months (range, 6–192 months). Isolated local-regional recurrence and distant metastases were observed in 15 (17.4%) and 24 (34.1%) cases, respectively. The most common loco regional relapses were in the chest wall (47%), supraclavicular area (40%), and axillary area (27%). The prognostic factors influencing local relapse were the T stage ($p = 0.002$) and chest wall muscular invasion ($p = 0.04$) in the univariate analysis. In the current study, the LC rate was 90.8% and 87.6% for patients who underwent MRM and lumpectomy axillary dissection, respectively. There was no statistical significance between the two groups. Patients who underwent an MRM due to a local relapse showed no improvement when compared with those who underwent conservative surgery (lumpectomy axillary dissection).

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