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Outcomes of Women with HER2 positive T1a or bN0M0 breast cancer: A retrospective population-based cohort study

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INTRODUCTION

Breast cancer is the most common cancer in women worldwide.[1] In North America, it is the second leading cause of cancer-related death.[2]

HER2 is a transmembrane receptor tyrosine kinase, which is overexpressed in approximately 20% of all breast cancers.[3]

Prior to HER2-targeted therapy, HER2 positive breast cancer had a poor prognosis, with higher mortality in early-stage disease, reduced relapse time and higher incidence of metastases.[4,5]

Trastuzumab (TZM) is a monoclonal antibody that targets the extracellular domain of the HER2 receptor.[3]

In the absence of level I evidence, this study attempted to compare the outcomes of women with HER2-positive T1a/bN0M0 disease who received adjuvant TZM to those who did not.

OBJECTIVES

- Identify factors associated with the use of adjuvant TZM.
- Study breast cancer recurrences with adjuvant TZM.
- Assess the survival outcomes of women with HER2-positive T1a/bN0M0 breast cancer who received adjuvant TZM.

MATERIALS & METHODS

This retrospective multicenter population-based cohort study included 91 adult women with histologically documented HER2-positive T1a/bN0M0 breast cancer.

A multivariate Cox proportional hazard regression analysis was performed to assess the correlation between adjuvant TZM and the outcomes of patients.

Key variables included age, major comorbid illnesses, performance status, ER/PR receptor status, tumor size, T status, tumor grade margin, type of surgery, adjuvant endocrine therapy, and adjuvant radiation.

RESULTS

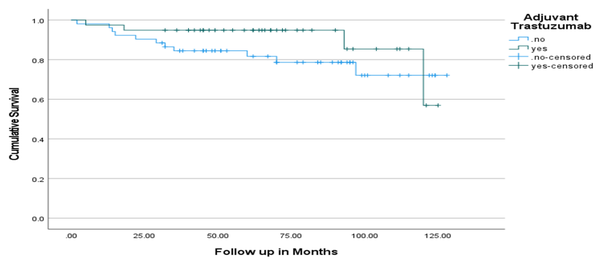
Overall, 39 (43%) women received adjuvant TZM and 52 (57%) women did not.

Groups were comparable. However, women in TZM group were significantly younger than the control group (median age 57 vs. 65 years, p = 0.02). In TZM group, 92% women had T1b disease compared to 40% in control group, and mean tumor size was 7.8 ± 2.0 and 5.3 ± 2.6 mm, respectively (p<0.0001).

Overall, 7 (8%) women developed breast cancer recurrence; 1 (3%) in the TZM group and 6 (12%) in the control group (p = 0.23).

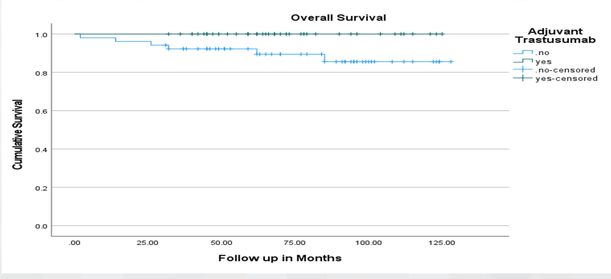
Median DFS was not reached. The estimated 5-year DFS was 94.8% in TZM group and 82.7% in control group (p=0.22; **Fig. 1**)

Fig. 1: Kaplan Meier disease-free survival curve



Five-year breast cancer-free survival was 97.4% in TZM group and 94.2% in control group (p=0.29). Median OS was 10.6 years in control group, and not reached in the TZM group. Five-year OS was 90.4% in control group versus 100% TZM group (p=0.038; **Fig. 2**).

Fig. 2: Kaplan Meier overall survival curve



CONCLUSIONS

The study suggests that adjuvant TZM confers some benefit in patients with early-stage breast cancer with a smaller tumor size and node-negative disease.

It showed that younger women and those with T1a/bN0 disease correlated with adjuvant TZM.

Adjuvant trastuzumab was associated with an improvement in survival outcomes.

Our study is limited due to small sample size and future clinical trials are needed to further investigate the role of adjuvant TZM in early-stage T1a and T1b node-negative HER2-positive breast cancer.

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