

Research paper 5

Association between stromal tumour infiltrating lymphocytes and hormone receptor status and Her2/neu in a cohort of Sri Lankan women with breast carcinoma

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Introduction and objectives: Stromal tumour infiltrating lymphocytes (TIL) has become an area of interest in discovering new therapies because it is thought to play a role in tumour progression. The aim of this study was to document the association between stromal TIL, ER, PR and Her 2/neu status in breast carcinoma.

Methodology: Stromal TIL was assessed and graded as no/minimal, intermediate and high based on the recommendations of the International Tumor Infiltrating Lymphocytes Working Group 2014 in a cohort of breast carcinoma patients who underwent wide local excision (WLE) or mastectomy. The ER and PR status were assessed using Allred score and Her2/neu results were extracted from the pathology reports. The Chi-squared test was used to determine the relationship between these parameters.

Results: In the ER-negative cases, 17.8% (13/73) had no/minimal, 43.8% (32/73) had intermediate and 38.4% (28/73) had high TIL. In the PR-negative group, 19.5% (16/82) had no/minimal, 42.7% (35/82) had intermediate and 37.8% (31/82) had high TIL. When the intermediate and high TIL groups were combined and considered the high-TIL group, 82.2% (60/73) of the ER-negative group and 80.5% (66/82) of the PR-negative group showed high TIL. Out of ER-positive cases, 47.7% (62/130) had no/minimal immune cells, 32.3% (42/130) had intermediate and 20% (26/130) had high immune TIL. Out of PR-positive cases, 49.2% (59/120) had no/minimal immune cells, 34.2% (41/120) had intermediate and 16.7% (20/120) had high TIL. The majority were HER2-negative (79.1%;159/201). The distribution of TIL was, 55/159 (34.8%) no/minimal, 67/159(42.4%) intermediate and 36/159(22.8%) high TIL.

Discussion and conclusion: When the intermediate and high TIL groups were combined, high stromal TIL was associated with negative ER and PR ($p < 0.001$), raising the possibility of different immune-tumour interactions based on the ER/PR status. There was no significant association between stromal TIL and Her2/neu in this study.

Keywords: breast, tumour infiltrating lymphocytes, hormone receptors, Her2/neu

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