Does the axillary lymph node ratio have any added prognostic value over pN staging for South East Asian breast cancer patients?


Abstract

INTRODUCTION:
Lymph node ratio (LNR, i.e. the ratio of the number of positive nodes to the total number of nodes excised) is reported to be superior to the absolute number of nodes involved (pN stage) in classifying patients at high versus low risk of death following breast cancer. The added prognostic value of LNR over pN in addition to other prognostic factors has never been assessed.

METHODS:
All patients diagnosed with lymph node positive, non-metastatic invasive breast cancer at the National University Hospital (Singapore) and University of Malaya Medical Center (Kuala Lumpur) between 1990-2007 were included (n = 1589). Overall survival of the patients was estimated by the Kaplan Meier method for LNR [categorized as low (>0 and <0.2), intermediate (0.2-0.65) and high (>0.65-1)] and pN staging [pN1, pN2 and pN3]. Adjusted overall relative mortality risks associated with LNR and pN were calculated by Cox regression. The added prognostic value of LNR over pN was evaluated by comparing the discriminating capacity (as indicated by the c statistic) of two multivariate models, one including pN and one including LNR.

RESULTS:
LNR was superior to pN in categorizing mortality risks for women ≥60 years, those with ER negative or grade 3 tumors. In combination with other factors (i.e. age, treatment, grade, tumor size and receptor status), substituting pN by LNR did not result in better discrimination of women at high versus low risk of death, neither for the entire cohort (c statistic 0.72 [0.70-0.75] and 0.73 [0.71-0.76] respectively for pN versus LNR), nor for the subgroups mentioned above.

CONCLUSION:
In combination with other prognosticators, substitution of pN by LNR did not provide any added prognostic value for South East Asian breast cancer patients.

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