Prognostic value of the lymph node ratio in breast cancer subtypes

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Purpose:
Axillary lymph node (LN) status is the only node-related factor involved in the prognostic evaluation of breast cancer. Several studies indicate that LN ratio (LNR) is more predictive than the traditional LN-positive stratification (pNs) of breast cancer. Therefore, we assessed whether LNR can provide additional prognostic information in patients with node-positive breast cancer, particularly with regard to breast cancer subtypes (BCS).

Materials and Methods:
We retrospectively reviewed the medical records of 2049 patients with primary breast cancer treated between January 2006 and December 2011 and identified 511 with positive axillary LN. Clinicopathological information on age, tumor characteristics, and treatment were collected; analyses of these characteristics and the associations between them were performed.

Results
For the entire cohort, we performed multivariate analysis for pNs (P < 0.001) and LNR (P < 0.001) with regard to the 5-year overall survival (OS). In a multivariate controlled model, the correlations of pNs and LNR in regard to OS were P < 0.001 and P < 0.001, respectively, with adjustment for tumor characteristics and treatment factors. On comparison of pNs and LNR with regard to OS among BCS, it was observed that LNR was more predictive in luminal A (P = 0.003), luminal B (P = 0.003), and luminal HER2 (P = 0.023).

Conclusions
LNR and pNs are important prognostic factors with regard to OS for patients with node-positive breast cancer, but LNR has a more predictive value in BCS.