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Neoadjuvant Chemotherapy for Breast Cancer: Revisiting the Lymph Node Ratio as a Prognostic Factor

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Neoadjuvant chemotherapy for locally advanced or early stage breast cancer is very popular due to its ability for disease downstaging and anatomic breast conservation.[1] In addition, this treatment modality may also provide prognostic information to the clinician as patients with pathologic complete response after surgery have excellent survival, prompting some institution to skip surgery if biopsy of the primary disease and lymph nodes shows no residual disease.[2] However, patients with pathologic lymph nodes involvement presents a dilemma as they experience a high rate of recurrence and a poor survival. There is a correlation between the number of metastatic lymph nodes and decreased survival. In principle, a minimum of 10 axillary lymph nodes or even more is recommended to avoid underestimation of the number of positive lymph nodes and false assessment of the risk of distant metastases.[3,4] However, following neoadjuvant chemotherapy, there was a significant decrease in the number of lymph nodes resected in addition to a change in morphology which clearly compromised the recommendation of axillary lymph node yield.[5,6] The question is whether the axillary lymph node ratio (LNR) touted as an effective method to predict survival after breast cancer surgery withstand the test of time.[7] Preliminary data suggests that the LNR is even more effective when the number of lymph nodes is reduced by chemotherapy.

Compared to the pathologic staging after neoadjuvant chemotherapy, the pathologic N stage was no longer associated with disease-free survival or overall survival.[8] In contrast, the LNR demonstrated an accurate prediction of those two parameters. Other studies also corroborated the superiority of the LNR over the traditional ypN stage regardless of histology, clinical T, and N stage at diagnosis.[9,10] Despite the paucity of lymph nodes resected after neoadjuvant chemotherapy, the LNR remained a reliable parameter to assess recurrence and survival.[11-13] A meta-analysis of 4,864 breast cancer patients who had neoadjuvant chemotherapy corroborated the LNR as an independent prognostic factor for survival. A high LNR correlated with a poor survival and disease-free survival.[14] Even though those studies are retrospective, we believe that LNR should be incorporated in future prospective studies of neoadjuvant therapy for breast cancer to validate its prognostic accuracy. As an international organization devoted to the care of older cancer patients, minorities, and women (http://www.igrg.org), we would like to conduct such prospective randomized studies with the LNR stratified to age and ethnicities as preliminary evidence indicated that women with African ancestry may have a worse prognosis following neoadjuvant therapy for breast cancer.[15,16]

CONFLICT OF INTEREST

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ETHICAL CONSIDERATIONS

Not applicable.

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