Absence of estrogen receptor is associated with worse oncologic outcome in patients who were received neoadjuvant chemotherapy for breast cancer

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Abstract

Background/Objective: Neoadjuvant chemotherapy (NAC) is a standard treatment for locally advanced breast cancer, especially for HER2-positive or triple negative breast cancer which shows good response to chemotherapy. However, because a result of biomarkers is, occasionally, changed after NAC, the treatment strategy should be differently applied for patients with locally advanced breast cancer.

Method: Fifty-seven patients with locally advanced breast cancer underwent NAC and the immunohistochemical (IHC) staining results were compared between before and after NAC. And the association between oncologic outcomes and biomarkers was analyzed.
Results: Negative status of estrogen receptor (ER) was associated with locoregional recurrence and distant metastasis both before and after NAC (p=0.021, 0.019; p=0.018, 0.036). And the negative status of progesterone receptor (PR) and triple negative status before neoadjuvant chemotherapy were also associated with death and distant metastasis, respectively. However, the changes of biomarkers after NAC in breast cancer were not directly associated with any oncologic outcomes.

Conclusion: The absence of ER in breast cancer before and after NAC would be a significant prognostic factor for local recurrence and distant metastasis. Therefore, the absence of ER should be considered as important factor in determining the treatment strategy.

Keywords: Neoadjuvant chemotherapy, Breast cancer, Biomarkers, Estrogen receptor