

Prognostic significance of the pretreatment platelet to lymphocyte ratio in patients with triple-negative breast cancer

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BACKGROUND: There is a growing body of evidence that immune response plays a large role in cancer mortality. Platelet to lymphocyte ratio (PLR) is a prognostic inflammatory marker for various tumors, but the current opinion on the prognostic value of PLR in triple-negative breast cancer (TNBC) is still controversial.

HYPOTHESIS: We hypothesize that PLR is a helpful marker which can distinguish those TNBC patients with a poor prognosis.

METHODS: We investigated the role of the PLR at diagnosis in patients with TNBC before any treatment. We retrospectively reviewed all TNBC patients who received standard treatment between April 2006 and November 2008 from the Third Affiliated Hospital of Harbin Medical University. To further study the discrimination performance of PLR status according to different algorithms in predicting survival status, we used receiver operating characteristic (ROC) curves.

RESULTS: In the enrolled TNBC patients, the mean counts of platelet were $253.46 \times 10^9/L$ and the mean counts of lymphocyte were $1.76 \times 10^9/L$. The mean PLR level were 150.1. The cut-off PLR value at diagnosis was 215.65 according to ROC analysis. A total of 301 patients were divided into two groups according to the PLR at diagnosis (low < 215.65 vs. high ≥ 215.65). The patients infused an PLR < 215.65 compared with patients infused with an PLR ≥ 215.65 experienced superior disease-free survival (DFS) using Kaplan-Meier survival analysis ($P = 0.005$). On multivariate analysis, a high PLR at diagnosis was an independent unfavourable prognostic factor for predicting survival (HR= 0.484; 95% CI, 0.284-0.820; $P = 0.000$). The PLR at diagnosis could be helpful for predicting prognosis in TNBC.