

Neutrophil-lymphocyte ratio and platelet-lymphocyte ratio are associated with prognosis of patients: a clinical high-grade endometrial carcinoma prognostic model

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January 14, 2023

Abstract

Objectives: To evaluate the predictive significance of neutrophil-lymphocyte ratio and platelet-lymphocyte ratio in the prognosis of high-grade endometrial carcinoma and to establish a novel predictive model. **Design:** A retrospective multicenter study. **Setting:** Fifteen hospitals of the Chinese Endometrial Carcinoma Consortium. **Population:** This study included 910 high-grade epithelial endometrial carcinoma patients from the multicenter who underwent initial surgical treatment between January 1, 2005, and December 31, 2019. **Methods:** Data was retrospectively obtained from the medical records and follow-up information of patients. Cox proportional hazard regression models were developed to predict the risk of recurrence and death at 3, 5, and 10 years, and the models were validated and calibrated. The area under the curve was used to measure the predictive performance of the model. **Main outcomes measures:** Disease-free survival and overall survival. **Result:** Platelet-lymphocyte ratio and neutrophil-lymphocyte ratio were risk factors for recurrence, and neutrophil-lymphocyte ratio was a risk factor for death. We established models for predicting death and recurrence. In the validation cohort, the area under receiver operating characteristic curve of disease-free survival model at 3, 5 and 10 years was 0.72, 0.77, 0.77, and of overall survival model was 0.72, 0.81, and 0.84. Kaplan–Meier survival analysis showed a significant difference between low-risk and high-risk groups. **Conclusions:** Neutrophil-lymphocyte ratio and platelet-lymphocyte ratio are risk factors affecting the prognosis of high-grade endometrial carcinoma patients. This novel prediction model for high-grade endometrial carcinoma can provide accurate postoperative risk classification and prognosis prediction for patients. **Keywords:** Endometrial carcinoma, prognostic model, neutrophil-lymphocyte ratio, platelet-lymphocyte ratio

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