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Background: Preoperative nutritional and immunological patient factors have been found to be associated with prognostic outcomes of malignant tumors; however, the clinical significance of these factors in pancreatic ductal adenocarcinoma (PDAC) remains controversial. The aim of this study is to evaluate the prognostic value of nutritional and immunological factors in predicting survival of patients with PDAC.

Methods: Retrospective studies of 329 patients who underwent surgical resection for PDAC and 95 patients who underwent palliative surgery were separately conducted to investigate the prognostic impact of tumor-related factors and patient-related factors including Glasgow Prognostic Score (GPS), modified GPS, prognostic nutritional index (PNI), neutrophil/lymphocyte ratio (NLR), platelet/lymphocyte ratio, and lymphocyte/monocyte ratio.

Results: In multivariate analysis for patients with surgical resection for PDAC, PNI was an independent factor for overall survival (OS) and disease-free survival. The median OS of patients with PNI ≤45 was significantly shorter than that of patients with PNI >45 (17.5 and 36.2 months, respectively; P<0.001). In multivariate analysis for patients undergoing palliative surgery for PDAC, only NLR was an independent prognosis factor. The median OS of patients with NLR >5 was significantly shorter than that of patients with NLR ≤5 (2.7 and 8.9 months, respectively; P<0.001).

Conclusions: PNI in patients with surgical resection and NLR in patients with palliative surgery for PDAC may be useful as prognostic factors.

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