



Prognostic Impact Of Preoperative Prognostic Nutritional Index In Resected Advanced Gastric Cancer: A Multicenter Propensity Score Analysis

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Abstract

Background: Advanced gastric cancer (AGC) causes debilitating malnutrition and leads to deterioration of the immune response. However, the concept of the prognostic nutritional index (PNI) is controversial when applied to patients with AGC. The aim of the present study was to evaluate the effect of the PNI after gastrectomy in patients with AGC.

Materials and Methods: A multicenterretrospective study was conducted using propensity score matching (PSM) in gastric adenocarcinoma patients who underwent resection via laparoscopic or open surgery between 2014 and 2017. To overcome selection bias, we performed 1:1 matching using 5 covariates.

Results: The resection margins ($P<0.001$) and LNM ($P=0.004$) were significantly different between the two groups. In univariate analysis, poor tumor differentiation ($P=0.038$) (R1+R2, $P=0.004$), vascular and neural invasion ($P<0.001$), and a PNI <50 ($P<0.001$) were associated with poor recurrence-free survival (RFS). In multivariate analysis, a PNI <50 (hazard ratio (HR), 12.993; $P<0.001$) was a risk factor for RFS. Univariate analysis for overall survival (OS) revealed that a PNI <50 ($P<0.001$) (R1+R2, $P=0.006$) and vascular and neural invasion ($P<0.001$) were risk factors. In subsequent multivariate analysis, a PNI <50 (HR, 24.501; $P<0.001$) was a significant risk factor for OS. Clinical assessments performed during a 12.34 (± 5.050) month follow-up revealed that OS ($P<0.001$) and RFS ($P<0.001$) were worse in patients with a low PNI (<50) than in matched patients with a high PNI.

Conclusion: A low PNI is a strong predictor of unfavorable RFS and OS in patients with AGC.

Keywords: advanced gastric cancer, prognostic nutritional index, prognosis, inflammation, propensity score matching