

Prognostic value of prognostic nutritional index in patients with polymyositis and dermatomyositis

분당 서울대학교병원 내과학교실

권은정, 강은하, 이윤종, 하유정

Background/Aims: Inflammation may cause malnutrition, that is associated with morbidity and mortality. Prognostic nutrition index (PNI) is an index that reflect immunonutritional status and it has been suggested as a prognostic marker in various chronic inflammatory diseases. Therefore, we aimed to evaluate the clinical significance of PNI in adult patients with polymyositis and dermatomyositis.

Methods: Between August 2003 and July 2020, we analyzed 222 patients with newly diagnosed polymyositis/dermatomyositis. Baseline PNI was calculated according to the following: $10 \times \text{serum albumin (g/dL)} + 0.005 \times \text{peripheral lymphocyte count (mm}^3\text{)}$. Clinical and laboratory findings were compared between survivors and non-survivors. Using receiver operating characteristic (ROC) curves, the PNI cut-off values for predicting survival were calculated. Univariate and multivariate analyses using Cox proportional hazard models were performed to identify factors associated with survival.

Results: The non-survivor group exhibited older age at diagnosis and a higher prevalence of interstitial lung disease (68.8% vs 50.0%, $p = 0.049$), acute interstitial pneumonia (54.6% vs 1.1%, $p < 0.001$), and acute exacerbation of ILD (77.3% vs 25.3%, $p < 0.001$) compared to that in the survivor group. Since PNI values were significant higher in the survivors ($p < 0.001$) with adult polymyositis and dermatomyositis, their optimal cutoff levels for predicting mortality were estimated by ROC. When patients were divided according to the PNI optimal cutoff values, patients with a lower PNI (< 31.99) had a significantly higher mortality rate (hazard ratio [HR] 4.068, $p < 0.001$) than those with higher PNI, respectively. In the multivariate analysis, age at diagnosis (HR 1.045, $p = 0.005$), the presence of acute interstitial pneumonia (HR 15.729, $p < 0.001$), CRP (HR 1.053, $p = 0.212$), and low PNI (HR 3.824, $p = 0.002$) were independent predictors for mortality.

Conclusions: Low PNI is independently associated with worse overall survival. The baseline PNI level may be a simple, cost-effective prognostic marker in patients with polymyositis/dermatomyositis.

