

BP OP 4-3

Oncologic Impact of Preoperative Prognostic Nutritional Index Change in Resected Pancreatic Cancer Following Neoadjuvant Chemotherapy

Kang Hyun KIM¹, Chang Moo KANG^{* 2, 3}, Ho Kyoung HWANG^{2, 3}, Woo Jung LEE^{2, 3}

¹Yonsei University College of Medicine, Yonsei University College of Medicine, Korea

²Division of HBP Surgery, Department of Surgery, Yonsei University College of Medicine, Korea

³Pancreatobiliary Cancer Clinic, Yonsei Cancer Center, Severance Hospital, Korea

Introduction : A variety of studies have focused on the oncologic impact of preoperative prognostic nutritional index (PNI). However, there was no study correlating preoperative PNI change and oncologic outcome of resected pancreatic cancer following neoadjuvant chemotherapy (NAC).

Methods : 110 pancreatic ductal adenocarcinoma patients who underwent NAC followed by surgical resection were retrospectively evaluated. Δ PNI was defined as post-NAC PNI subtracted by pre-NAC PNI. Patients were divided into high Δ PNI group (>-2.25 , $n=55$) and low Δ PNI group (≤ -2.25 , $n=55$) according to optimal cut-off value selected using using Contal and O'Quigley's method. Clinicopathological characteristics including long-term oncologic outcomes, such as overall survival (OS) and disease-free survival (DFS), were compared. In addition, univariate and multivariate analysis were used to identify independent prognostic factors.

Results : High Δ PNI group was found to be related with lower pre-NAC PNI (47.09 ± 4.74 vs 52.01 ± 5.68 , $p < 0.001$) and higher post-NAC PNI (50.13 ± 4.80 vs 42.71 ± 7.32 , $p < 0.001$) when compared with low Δ PNI group. Furthermore, high Δ PNI group was associated with longer OS compared with low Δ PNI (mean OS: 64.16 months [95% CI: 50.15-78.17] vs. 39.98 months [95% CI: 26.89-53.08], $p=0.002$). There was no significant difference in DFS ($p > 0.05$). Multivariate analysis revealed that low Δ PNI was an independent risk factor for OS (HR, 3.101; 95% CI, 1.741-5.524; $p < 0.001$), but not for DFS ($p > 0.05$).

Conclusions : Low Δ PNI (≤ -2.25) was an independent risk factor for overall survival of resected pancreatic cancer patients following NAC. In preoperative setting, improving PNI can be one of the strategy to improve long-term oncologic outcome. Further study is mandatory.

Corresponding Author. : **Chang Moo KANG** (cmkang@yuhs.ac)