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Preoperative serum glucose to lymphocyte ratio as an independent prognostic factor; developing 3-scored survival estimating system in resected pancreatic ductal adenocarcinoma

[1,2]Incheon Kang, [1,2]Ho Kyoung Hwang, [1,2]Dong Sup Yoon, [1,2]Woo Jung Lee, [1,2]Chang Moo Kang

[1]*Division of Hepatobiliary and Pancreatic Surgery, Department of Surgery, Yonsei University College of Medicine, Seoul, Korea*
[2]*Pancreatobiliary Cancer Center, Yonsei Cancer Center, Severance Hospital, Seoul, Korea*

*vorbote@yuhs.ac, Incheon Kang
**cmakng@yuhs.ac, Chang Moo Kang

Purpose:

We hypothesized that elevated glucose to lymphocyte ratio (GLR) might be a sensitive prognostic biomarker to determine the disease specific survival of pancreas ductal adenocarcinoma (PDAC). Moreover, we try to develop scoring system to predict the prognosis of PDAC by using only clinically available preoperative parameters.

Methods:

Between May 1999 and August 2016, 224 patients with resectable pancreas ductal adenocarcinoma underwent surgical resection at a single institute. Medical records were retrospectively reviewed. The preoperative clinical parameters, inflammatory markers, glucose, GLR, albumin, tumor size, carbohydrate antigen 19-9, and follow up data were collected. Survival analysis and Cox regression were performed to evaluate oncologic outcomes.

Results:

A total of 224 patients were included in the study. In multivariate analysis, GLR >105.5 (HR=1.6074, 95% CI: 1.119-2.308 p=0.0102), CA19-9≥150 (HR=1.432, 95% CI: 0.999-2.053, p=0.0505), and image tumor size ≥ 2 cm (HR=1.586, 95% CI: 1.113-2.259, p=0.0106) were independent prognostic factor in determining long-term cancer-specific survival. We developed 3-scored survival estimating system. Overall survival is significantly different according to divided subgroups (p<0.001)

Conclusion:

GLR is an independent prognostic factor of DSS in PDAC. 3-scored survival estimating system can serve as a model for assessing the possibilities of individual treatment option.