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Where Is The Predictive Marker For Decision Of Neoadjuvant Treatment For Resectable Pancreatic Cancer? New Predictive Strategy Using CA19-9 And Fecal Elastase Levels

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Background : Pancreatic ductal adenocarcinoma (PDAC) is fatal. Carbohydrate antigen 19-9 (CA19-9) is used as a marker to predict recurrence and survival of patients with PDAC; however, it is not an absolute marker for the prognosis of PDAC owing to false-negative and false-positive results. Recently, fecal elastase-1(FE-1), a marker of pancreatic exocrine function, has been shown to correlate with prognosis in patients with PDAC. In this study, we developed a predictive strategy for prognosis of PDAC using data on preoperative CA19-9 and FE-1 levels.

Methods : The clinical data of patients with resectable pancreatic cancer from two hospitals were analyzed. The cut-off points of CA19-9 and FE-1 levels were extracted from the Youden index and previous studies (385 U/ml and 100 μg/g stool, respectively). Cox proportional hazard models were used to investigate the association between preoperative tumor marker levels and survival (3-/5-year overall survival and 1-/3-year recurrence free survival) after surgery.

Results : A total of 536 patients who underwent curative intent surgery between 2010 and 2019 were included in the study. Patients in the CA19-9 ≥ 385 group had more advanced T and N stages ($p < 0.05$) and lower survival rates than CA19-9 < 385 group. Multivariate Cox analyses demonstrated that combining preoperative tumor markers was significantly associated with worse 3-survival rate (both CA19-9 and FE-1 below the cutoff values, HR=1.41, $p = 0.044$; both above, HR=1.44, $p=0.047$; CA19-9 above and FE-1 below, HR=2.00, $p = 0.0001$; and p for trend = 0.0002). The same trend was confirmed in the analysis with 5-year overall and 1- and 3-year recurrence-free survival.

Conclusions : Our analyses of the correlation between survival outcomes and CA19-9 and FE-1 levels in patients with PDAC showed that these values were accurate and convenient prognostic indicators. This study presents a new predictive strategy using combined CA19-9 and FE-1 levels to determine the direction of treatment for resectable pancreatic cancer.

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