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## Anion Gap Is A New Predictor Of Clinically Relevant Postoperative Pancreatic Fistula After Pancreaticoduodenectomy

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**Background** : Clinically relevant postoperative pancreatic fistulae (CR-POPF; International Study Group on Pancreatic Fistula Grade B and C) is a serious complication after pancreaticoduodenectomy (PD). Early management by predicting CR-POPF is considered important to improve surgical outcomes. The aim of this study was to identify predictors of CR-POPF among simple laboratory findings.

**Methods** : This single-center, retrospective study included 208 patients who underwent PD between March 2000 and September 2022. Laboratory findings such as drain fluid amylase (DFA), serum amylase, anion gap (AG), albumin, sodium, neutrophil-lymphocyte ratio, and platelet-lymphocyte ratio were identified on the postoperative day (POD) 1, POD 3, and POD 5. Receiver operating characteristic (ROC) curve analyses and Cox proportional hazard regression model were used to identify the predictors of CR-POPF.

**Results** : Of 208 patients (mean age, 65.9 years; 78 [37.5%] women), 35 CR-POPF occurred (16.8%). In ROC curve analyses, DFA POD 1, POD 3, POD 5, serum amylase POD 1, POD 3, POD 5, AG difference from immediately postoperative to POD 3, Albumin difference from immediately postoperative to POD 5, Sodium difference from immediately postoperative to POD 3, and neutrophil-lymphocyte ratio POD 5 showed a significant correlation with CR-POPF. In multivariate analysis, DFA POD 1  $\geq 2200$  IU/L and AG difference from immediately postoperative to POD 3  $\geq 5.2$  mEq/L were statistically significant predictors of CR-POPF.

**Conclusions** : This study demonstrated that AG difference from immediately postoperative to POD3 is a new and easily obtainable predictor of CR-POPF after PD.

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