

**BP OP 1-4****Preoperative serum carbohydrate antigen 19-9 levels predict early recurrence after the resection of early-stage pancreatic ductal adenocarcinoma**

Sarang HONG, Ki Byung SONG*, Dae Wook HWANG, Jae Hoon LEE, Woohyung LEE, Jaewoo KWON, Yejong PARK, Song Cheol KIM

Division of Hepatobiliary and Pancreatic Surgery, Department of Surgery, Asan Medical Center, University of Ulsan College of Medicine, Korea

Introduction : To evaluate the predictive factors associated with the early recurrence of early-stage pancreatic ductal adenocarcinoma (PDAC).

Methods : This study enrolled 407 patients with stage I PDAC undergoing upfront surgical resection between January 2000 and April 2016. Early recurrence was defined as a diagnosis of recurrence within 6 months of surgery. The optimal cutoff values were determined by receiver operating characteristic (ROC) analyses. Univariate and multivariate analyses were performed to identify the risk factors for early recurrence.

Results : Of the 407 patients, 304 (74.7%) experienced disease recurrence within a median time of 10 months. Among 98 patients (24.1%) with early recurrence, 26 (26.5%) and 72 (73.5%) experienced local and distant recurrences, respectively. In total, 253 (62.2%) patients received adjuvant chemotherapy. The optimal cutoff values for early recurrence were 70 U/mL and 2.85 cm for carbohydrate antigen (CA) 19-9 levels and tumor size, respectively, on ROC curve analysis. Of 181 patients with CA 19-9 levels of >70 U/mL, 59 (32.6%) had early recurrence, compared to 39 (17.4%) among 226 patients with CA 19-9 levels of ≤70 U/mL ($p<0.001$). Multivariate analysis revealed that a CA 19-9 level of >70 U/mL ($p=0.006$), tumor size >2.85 cm ($p=0.004$), poor differentiation ($p=0.008$), and non-adjuvant chemotherapy ($p=0.025$) were significant risk factors for early recurrence in early-stage PDAC.

Conclusions : Elevated CA 19-9 level (cutoff value >70 U/mL) can be a reliable predictive factor for early recurrence in early-stage PDAC. As adjuvant chemotherapy can prevent early recurrence, it should be recommended for patients susceptible to early recurrence.

Corresponding Author. : **Ki Byung SONG** (mtsong21c@amc.seoul.kr)

Presenter : **Sarang HONG** (8thofnovember@hanmail.net)