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Pathological Response Predicts Survival After Pancreatectomy Following Neoadjuvant FOLFIRINOX For Pancreatic Cancer

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Background : In pancreatic cancer, complete pathologic response (cPR) after neoadjuvant treatment (NAT) has been rarely reported and its clinical course is not well-known. This study aimed to investigate the clinical course of patients according to pathological response including cPR who received only FOLIFIRNOX in advanced pancreatic cancer.

Methods : Patients who underwent pancreatectomy after FOLFIRINOX for pancreatic ductal adenocarcinoma (PDAC) from 2017 to 2019 were retrospectively reviewed. cPR was defined as an absence of residual tumor on pathologic reports. A nearly complete pathologic response (ncPR) was defined as a tumor confined to the pancreas parenchyma, less than 1cm without lymph-node metastasis. cPR and ncPR were assigned to a favorable pathologic response group (fPR). Kaplan-Meier method and Cox proportional-hazard models were used for analysis.

Results : Of a total of 64 patients, 8 (12.5%) had a cPR and 8 (12.5%) had a ncPR. In the fPR group, median OS and DFS were superior to those of the non-pathologic response group (more than 60 months vs. 38 months, $p < 0.001$; more than 42 months vs. 10 months, $p < 0.001$). On multivariable analyses, fPR and adjuvant therapy were independent prognostic factors for OS (HR: 0.12; 95% CI: 0.02-0.96, $p = 0.05$; HR: 0.26; 95% CI: 0.09-0.74, $p = 0.01$) and DFS (HR: 0.31; 95% CI: 0.12-0.86, $p = 0.02$; HR:0.31; 95% CI: 0.13-0.72, $p = 0.01$).

Conclusions : Pathologic response predicts survival after pancreatectomy following neoadjuvant FOLFIRINOX for pancreatic cancer and, adjuvant chemotherapy following neoadjuvant treatment might be beneficial for improved OS and DFS.

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