

# Pancreatectomy Following Neoadjuvant Treatment Can Improve Oncologic Outcome In High Metabolic Active Resectable Pancreatic Cancer

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**Background :** Neoadjuvant chemotherapy is recommended for borderline resectable pancreatic ductal adenocarcinoma (R-PC). However, there is controversy about whether neoadjuvant chemotherapy can be used in patients with R-PC. In our previous study, high metabolic active R-PC is known to be associated with early systemic metastasis in resected PDAC. This study aims to compare the prognosis of high metabolic active R-PC according to the presence or absence of neoadjuvant chemotherapy.

**Methods :** From 2005 to 2019, a total of 244 patients with R-PC who underwent radical pancreatectomy at Severance Hospital. Among them, a total of 200 patients in T1,2,3 (7th edition) were analyzed retrospectively, excluding 11 patients with the lack of Positron Emission Tomography- computed tomography (PET-CT) data. The metabolic tumor volume (MTV) was measured in PET-CT by specialist of nuclear medicine.

**Results :** The patients were divided into an upfront surgery group (N=153) and a neoadjuvant treatment group (N=47), and in each group, high metabolically active PDAC was 79 and 29, respectively. In upfront surgery group, R-PC with high MTV2.5 (N=79) has worse median disease free survival (mDFS) than low MTV2.5 (N=74) ( $p=0.001$ ). In R-PC with High MTV2.5, neoadjuvant chemotherapy group (N=29) has better mDFS than upfront surgery group (N=79) [10.30 (95%CI 7.821-12.779) vs 18.30 (95% CI 8.638-27.962),  $p = 0.04$ ]. In R-PC with low MTV2.5, there was no significant difference in mDFS between two groups (20.97 (95%CI 16.20-25.74) vs 10.70 (2.94-18.46),  $p = 0.161$ ).

**Conclusions :** Pancreatectomy following neoadjuvant treatment can improve oncologic outcome in high metabolic active R-PC. Neoadjuvant treatment need to be selectively applied for R-PC.

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