

## THE EFFECT OF PREOPERATIVE RADIOTHERAPY IN THE RESECTABLE PANCREATIC CANCER : A PROSPECTIVE SINGLE CENTER PILOT STUDY

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**Background** : There is no report on the effect of preoperative radiotherapy alone for pancreatic cancer, and the role of radiotherapy has been limitedly applied as an adjuvant concept in margin positive patients. We conducted a prospective pilot study to evaluate the efficacy of preoperative radiotherapy in resectable pancreatic cancer.

**Methods** : For the patients diagnosed with resectable pancreatic head cancer from 2022 to 2024 in Severance hospital, Seoul, Korea and who agreed with informed consent, preoperative radiotherapy followed by pancreaticoduodenectomy(PPPD) were performed. These patients(RTx group) were compared with patient who underwent neoadjuvant chemotherapy followed by PPPD(CTx group) and patients who underwent upfront surgery(Upfront group) in the same period.

**Results** : Total 110 patients were enrolled and 10 patients in RTx group, 57 patients in CTx group and 43 patients in Upfront group. Preoperative characteristics and perioperative outcomes did not differ between three groups. In pathologic outcomes, tumor size was most small in CTx group (RTx group 2.3cm vs CTx group 2.0cm vs Upfront group 2.5cm,  $p<0.001$ ), however lymphovascular invasion (RTx group 10.0% vs CTx group 31.6% vs Upfront group 55.8%,  $p=0.007$ ) and margin positive ratio (0.0% vs 10.5% vs 25.6%, respectively,  $p=0.044$ ), were the smallest in RTx group. RTx group showed improved disease free survival compared upfront group ( $p=0.041$ ), however, there was no differences between other groups. Overall survival did not differ between these groups. ( $p=0.680$ )

**Conclusions** : This pilot study demonstrated the potential of preoperative radiotherapy in local control of resectable pancreatic cancer, and can serve as an academic foundation for futhre large scale RCT studies.

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