Surgical methods in treating pancreatic tumours

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ABSTRACT

Background: In patients with pancreatic cancer 15-20% are resectable at the time of diagnosis. Still another 8-20% are found to be unresectable at laparotomy. The optimal intraoperative strategy for this group is not known. Some patients experience early recurrence of the cancer indicating undetected advanced disease at the time of surgery. We need tools to detect these patients, who do not benefit from surgery. Pancreatic surgery is still associated with a high burden of complications, postoperative pancreatic fistula (POPF) being the potentially most harmful. The overall aim of this thesis project was to investigate whether modification of existing surgical techniques and preoperative routines can improve postoperative outcome in patients with pancreatic tumours.
Methods: Paper I was a retrospective study comparing postoperative outcome for patients diagnosed with unresectable periampullary cancer at laparotomy and treated either with endoscopically placed stents on demand or prophylactic double bypass surgery. Paper II was a prospective study where patients treated with PD for suspected periampullary cancer had lymph node (Ln) 8a separately analysed. Tumour status of the lymph node was compared regarding overall survival (OS). Paper III was an RCT randomizing patients planned for DP to stapler division of the pancreas with or without stapler reinforcement, looking at POPF frequency postoperatively. Paper IV is a registry-based study that retrieved data from the Swedish National Pancreatic and Periampullary Cancer Registry to compare two pancreatic reconstructions after PD, pancreatogastrostomy (PG) and pancreatojejunostomy (PJ), regarding POPF development.
Results: Paper I – There were more complications and longer hospital stay in the surgery group compared to the group treated with stent on demand. In addition a prophylactic gastroenteric anastomosis did not prevent future gastric outlet obstruction. Paper II - Tumour growth in Ln8a is associated with a substantial reduction of OS. Paper III – No differences in POPF between the study groups were observed. Paper IV - The PJ group had significantly more clinically relevant POPF and more severe complications than the PG group.
Conclusions: Patients with unresectable periampullary malignancies can safely be managed with endoscopic drainage on demand and with lower morbidity and shorter hospital stay than with surgical prophylactic bypass. Tumour involvement of Ln8a is associated with short OS. Reinforcement of the stapler line in DP does not reduce POPF frequency. PG might to be a safer pancreatic reconstruction than PJ due to less risk of developing clinically relevant POPF.

Keywords: pancreatoduodenectomy, distal pancreatectomy, pancreatogastrostomy, pancreatojejunostomy, postoperative pancreatic fistula, lymph node 8a, palliative surgery

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I. Williamsson, C., **Wennerblom, J.**, Tingstedt, B., Jönsson, C. A wait-and-see strategy with subsequent self-expanding metal stent on demand is superior to prophylactic bypass surgery for unresectable periampullary cancer. HPB: the official journal of the International Hepato Pancreato Biliary Association 2015; 18: 107-112.

II. **Wennerblom, J.**, Saksena, P., Jönsson, C., Thune, A. Lymph node 8a as a prognostic marker for poorer prognosis in pancreatic and periampullary carcinoma. Scandinavian Journal of Gastroenterology 2017; 2: 225-230.

III. **Wennerblom, J.**, Zeeshan, A., Björnsson, B., Tingstedt, B., Jönsson, C., Ansorge, C., Blomberg, J., Del Chiaro, M. Closure of the pancreatic remnant with staple reinforcement fails to reduce postoperative pancreatic fistula (POPF) compared with standard staple technique after distal pancreatectomy: Result from a multicentre prospective randomized trial. Submitted 2018

IV. **Wennerblom, J.**, Williamsson, C., Gasslander, T., Thune, A., Tingstedt, B., Jönsson, C. Pancreatogastrostomy results in less anastomotic leakage than pancreatojejunostomy – a Swedish register-based study. In manuscript 2018.

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