Preoperative protocols for pancreatic surgery are an aspect of pancreatic cancer therapy yet to be standardized. Current image based assessments have been questioned, as upwards of 30% of pancreatic cancers considered resectable are unresectable by the time of laparotomy. It is currently unknown whether or not an appropriate time window exists between diagnosis and surgical treatment. The focus of this study will therefore aim to better understand preoperative radiological factors and the time delay between imaging to treatment in patients with potentially curable pancreatic cancer.

A leading cause of morbidity following pancreatic surgery is the development of pancreatic fistula. Infections and hemorrhage are sequelae of pancreatic fistula and have been associated with mortality rates of over 40%. A number of risk factors and preventive measures have been studied, yet the heterogeneity of pancreatic disease still makes it challenging to establish standardized protocols. Studies II and III focus on better understanding this potentially fatal complication. There have been numerous discussions regarding the optimal pancreatic anastomosis following Whipple's resection. With regards to this, study II aims to prospectively compare the duct-to-mucosa end-to-side pancreatic anastomosis with the end-to-end invaginated pancreatic anastomosis in patients at high risk for developing pancreatic fistula. Study III will focus on prospectively investigating the need for intra-peritoneal drainage in patients at a low risk for developing pancreatic fistula. Intra-peritoneal drainage has been shown to increase hospital stay and the risk for infections. Eliminating the need for drainage would thus lower morbidity in select patient groups.

The Whipple's procedure in an operation requiring perioperative transfusions. Studies have indicated that excess fluid administration may increase associated morbidity. To better understand this, study IV will focus on intraoperative fluid management. After adjusting for known risk factors, the effect of fluid administration on postoperative complications will be analyzed to establish guidelines relating to perioperative fluid management.

In conclusion, pancreatic cancer requires aggressive surgery and comes with a high rate of postoperative morbidity. The aim of this PhD project is to systematically evaluate these potentially new standards in the surgical management of pancreatic surgery.