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About the author

Luís Carvalho (°1983) studied Medicine in Lisbon (Portugal) and graduated in 2007. During his studies, an internship in Ghent (Belgium) sparked his interest in surgery. He completed his surgical training in Ghent, with additional specialization in hepato-pancreatobiliary surgery and transplantation, including an internship in Lille (France) and a one year fellowship at the Leuven University Hospital. After obtaining his surgical accreditation in 2015 and further fellowship training, he joined the surgical staff at the Ghent University Hospital. In 2018, he acquired the European Board of Surgery qualification in Hepato-Pancreato-Biliary Surgery.

Alongside his clinical work, he developed the research project that led to this doctoral thesis.

Dissertation

Dissertation available via <https://biblio.ugent.be> or on request via luisfacarvalho@gmail.com

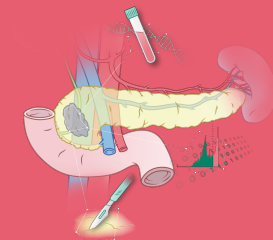
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Diagnostic work-up, treatment modalities and survival in borderline resectable and locally advanced pancreatic cancer

Luís Filipe Abreu de Carvalho

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Promotor

Prof. F. Berrevoet
Department of General, HPB Surgery and Liver Transplantation, Ghent University Hospital
Department of Human Structure and Repair, Ghent University

Co-Promotor

Prof. K. Geboes
Department of Gastroenterology – Digestive Oncology, Ghent University Hospital
Department of Internal Medicine and Pediatrics, Ghent University

Summary

Background and aims

Pancreatic cancer is associated with a poor prognosis, and its incidence is increasing due to population aging, longer life expectancy, and the rising prevalence of obesity and diabetes. For patients with borderline resectable or locally advanced pancreatic cancer - characterized by venous and/or arterial involvement - optimal treatment strategies are still evolving.

The aim of this thesis is to improve the characterization of borderline resectable and locally advanced pancreatic cancer by analyzing the diagnostic work-up and surgical selection, the role and tolerability of chemotherapy administered before surgery (neoadjuvant), and oncological outcomes.

Findings

In Chapter 3, patients with borderline resectable and locally advanced pancreatic cancer were compared to identify predictors of survival and to assess whether these groups truly represent distinct entities. Surgical resection emerged as the only predictor of survival, independent of the initial classification as borderline resectable or locally advanced. In a second study, the role of neoadjuvant chemotherapy as an intraoperatively defined salvage strategy was explored in patients

unexpectedly diagnosed with locally advanced disease during surgical exploration. This approach resulted in a 30% resection rate, low operative morbidity, and survival outcomes that were not inferior to those achieved with technically demanding upfront surgery.

Chapter 4 presents the protocol of a multicentric, multidisciplinary prospective trial (PeRFormance) designed to evaluate surgical resectability after neoadjuvant chemotherapy. This study integrates radiological, surgical, patient-reported, and translational components (including radiomics and multi-omics) with the aim of improving the prediction of resectability and optimizing therapeutic decision-making.

Chapter 5 examines the evolution of quality of life during neoadjuvant chemotherapy as a bridge to surgery. Incorporating the patient's perspective is essential to contextualize oncological outcomes and to balance potential benefits against treatment-related morbidity. This subgroup analysis of the PeRFormance trial demonstrates that quality of life can be maintained over time during neoadjuvant chemotherapy despite fluctuations in symptoms.

Publications

1. de Carvalho LFA, Gryspeerdt F, Rashidian N, Van Hove K, Maertens L, Ribeiro S, Hoorens A, Berrevoet F. Predictive factors for survival in borderline resectable and locally advanced

pancreatic cancer: are these really two different entities? *BMC Surg.* 2023 30;23(1):296.

2. Abreu de Carvalho LF, Gryspeerdt F, Ceelen W, Geboes K, Ribeiro S, Hoorens A, et al. Prediction of surgical resectability after FOLFIRINOX chemotherapy for borderline resectable and locally advanced pancreatic cancer (PeRFormanCe): a multicenter prospective trial - trial protocol. *BMC Surg.* 2025 13;25(1):204.
3. Gryspeerdt F¹, Abreu de Carvalho LF¹, Rashidian N, Ribeiro S, Hoorens A, Geboes K, Berrevoet F. Success rate of salvage neoadjuvant chemotherapy for unexpectedly identified locally advanced pancreatic ductal adenocarcinoma during surgical exploration. *HPB (Oxford).* 2026;28(1):35-42. (¹These two authors contributed equally to this work)
4. Abreu de Carvalho LF, Ceelen W, Meertens A, Rashidian N, Waked B, Geboes K, et al. Longitudinal Assessment of Health-Related Quality of Life in Patients with Borderline and Locally Advanced Pancreatic Cancer Undergoing Neoadjuvant FOLFIRINOX Chemotherapy: Results from a Prospective Multicenter Trial → submitted for publication