

Author response to: Venous wedge and segment resection during pancreatoduodenectomy for pancreatic cancer: impact on short- and long-term outcomes in a nationwide cohort analysis

Jesse V. Groen* , Nynke Michiels and J. Sven D. Mieog 

Department of Surgery, Leiden University Medical Center, Leiden, The Netherlands

*Correspondence to: Jesse V. Groen, Department of Surgery, Leiden University Medical Center, Albinusdreef 2 2300 RC Leiden, The Netherlands (e-mail: J.V.Groen@lumc.nl)

Dear Editor

We appreciate the interest of Wang *et al.* in our study¹ in which we analysed the results of venous resection during pancreatoduodenectomy in a nationwide cohort. We address the comments from Wang *et al.* point-by-point below.

Concerning the inclusion of patients with M1 stage, we do agree that there is currently no evidence to support performing pancreatic resection in patients with metastasized pancreatic cancer. However, some patients who are cM0 staged at clinical staging and subsequently undergo resection are in fact pM1 staged at pathological staging. In our study, we purposely also included patients who underwent pancreatoduodenectomy and were only thereafter pM1 staged (2.5 per cent), because we aimed to investigate the current clinical practice. A *post hoc* subgroup analysis of only patients who were pM0 staged after pancreatoduodenectomy, showed similar results of worse overall survival in patients with segmental venous resection (hazard ratio 1.44, 95 per cent c.i. 1.13 to 1.84).

Further, Wang *et al.* suggest the lower rate of adjuvant therapy in the segmental venous resection group to explain the lower overall survival. We would like to point to the analysis provided in Table S2 in which we investigated the use of adjuvant therapy in patients without postoperative mortality. In this multivariable analysis, patients with segmental venous resection still showed worse overall survival (hazard ratio 1.34, 95 per cent c.i. 1.04 to 1.72) and, not surprisingly, patients who received adjuvant therapy showed better overall survival (hazard ratio 0.57, 95 per cent c.i. 0.49 to 0.68). Of note, confounding by indication should be

considered when interpreting the results of observational data as the decision to use adjuvant therapy was made in the clinical context of the patient. Therefore, we chose to only publish these results in the *Supplementary material*.

Finally, Wang and co-workers commented on the non-inclusion of resection margin status in the multivariable analysis, where we in fact did include resection margin status as factor in the multivariable analysis for overall survival provided in Table 2. The suggested 'inferior mesenteric vein approach' by Wang's team might be an interesting approach to improve radicality. Even more so, we would like to stress the importance of including neoadjuvant chemotherapy in the treatment strategy for patients with a need for venous resection to improve radicality. In addition, improvements in pre- and intraoperative imaging tools can also help to better direct the performance of a radical venous resection. We are currently analysing the data of our ULTRAPANC study, which assesses the added value of intraoperative ultrasound in patients with pancreatic cancer and vascular involvement (<https://www.trialregister.nl/trial/7621>).

Reference

1. Groen JV, Michiels N, van Roessel S, Besselink MG, Bosscha K, Busch OR *et al.* Venous wedge and segment resection during pancreatoduodenectomy for pancreatic cancer: impact on short- and long-term outcomes in a nationwide cohort analysis. *Br J Surg* 2021;**109**:96–104