

Response to: Comment on “Risk Models for Developing Pancreatic Fistula After Pancreatoduodenectomy: Validation in a Nationwide Prospective Cohort”

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We thank Yang and colleagues for their interest in our study.¹ In their letter, the authors remarked that several independent prognostic factors such as computed tomography (CT) visceral fat, pancreatic duct diameter on CT imaging, and pancreatic spleen signal ratio on T1 fat-suppressed magnetic resonance imaging (MRI) sequences were not accounted for in our study.² Although these are all very promising features, these could not be included in our study since the search of our study only comprised studies up to December 2021. The predictive role of preoperative CT imaging will, however, be the subject of further study in the PORSCH trial cohort by our group. As for the role of MRI, we would like to point out that in the Netherlands, and many other countries worldwide, it is current practice to perform CT and not MRI in the preoperative setting of patients undergoing pancreatic resection. MRIs were therefore only available for a very small number of patients in the PORSCH trial.³

Regarding the use of imaging to predict pancreatic fistula, we strongly believe that the application of artificial intelligence could play a key role due to its ability to recognize and identify variables of yet unknown features related to pancreatic fistula in a timely manner. For instance, an international study recently developed a novel fistula risk score based on the radiomic features of preoperative CT scans using machine learning techniques (radiomics-based preoperative-Fistula Risk Score).⁴ The model demonstrated good performance both internally (area under the curve 0.90) and externally (area under the curve 0.81)

with good calibration. In contrast to the models that we previously described in our study that also used radiomic features to predict the occurrence of pancreatic fistula, the RAD-FRS model was externally validated. Nevertheless, it must be noted that prospective validation is warranted to determine its true value in clinical decision-making.

The authors also stated that the ratio of drainage fluid to serum amylase concentration could be an important predictor of clinically relevant pancreatic fistula, according to a recent report.⁵ However, the study population in which this was evaluated only included patients who underwent distal pancreatectomy. Therefore, its predictive value in patients undergoing pancreatoduodenectomy remains to be evaluated, which we believe may be investigated in future research.

Again, we thank Yang and colleagues for their commentary and would like to underline that all tested risk scores for postoperative pancreatic fistula after pancreatoduodenectomy performed moderately after external validation in our cohort.¹ Therefore, future studies are necessary to both develop new and externally validate novel risk models that can accurately identify low- and high-risk patients and consequently be helpful in daily clinical practice, potentially by using artificial intelligence.

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