ABSTRACT

Purpose: To characterize the variability of pancreatic veins in preparation for trials utilizing Pancreatic Retrograde Venous Infusion (PRVI) with Pressure Enabled Drug Delivery (PEDD) for locally advanced pancreatic ductal adenocarcinoma.

Materials and Methods: From November 2020-October 2021, 117 triple-phase liver CT scans were reviewed. The presence of pancreatic cancer was noted. Diameter, visible length, angle of insertion into draining vein, tortuosity, and presence of intra-parenchymal collateralization were recorded for each pancreatic vein seen. Veins greater than 10 and 20 mm in length and with diameters between 2-6 mm were documented to identify targets for PRVI with PEDD.

Results: 350 veins were identified across 117 CT scans. The mean number of pancreatic veins visible per patient was 2.99 with a standard deviation of 1.00. 285 veins were best seen in the portal phase, 14 in the arterial phase, 41 in the venous phase, and 10 with a combination of arterial & portal phase. The pancreatic head drained into the portal vein or SMV. The tail drained into the splenic vein while the body drained into the portal, SMV, and splenic vein. 10 of 22 patients (45.5%) with pancreatic tumors had veins draining the tumors. 83.7% of veins had adequate diameters (2-6 mm) and 59.4% were of at least 10 mm length.

Conclusion: Based on CT findings, the dimensions of the veins (such as diameter, angle, and length) are consistent with the ability to enter the veins from portal access.

Keywords: PDAC, pancreas, veins