

学 位 論 文 の 要 旨

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<p>主論文の題名</p> <p>Perfusion CT to assess response to neoadjuvant chemoradiotherapy in pancreatic ductal adenocarcinoma: initial experience</p> <p>主論文の要旨</p> <p>Background: Change in tumor size on CT is insufficient for reliable assessment of treatment response after neoadjuvant chemoradiation therapy (CRT) and shows poor correlation with histological grading of response.</p> <p>Purpose: To investigate the use of perfusion CT to predict response of pancreatic ductal adenocarcinoma (PDA) to CRT.</p> <p>Materials and Methods: Between June 2016 and May 2018, study participants with biopsy-proven PDA were prospectively recruited to undergo perfusion CT before and after planned CRT. Blood flow (BF), blood volume (BV), and permeability-surface area product (PS) were quantified from CT images. Participants were categorized into responders and non-responders according to therapy response. Mann Whitney test was used to compare baseline the perfusion values between responders and non-responders, and Wilcoxon matched-pairs signed rank test was used to compare perfusion values before and after CRT.</p> <p>Results: The final cohort of 21 participants (median age 68 (interquartile range, 65-72) years, 8 men) had dynamic perfusion CT (dual-source) performed before neoadjuvant CRT and all underwent pancreatectomy. Eighteen participants underwent post-CRT perfusion CT. Baseline BF was higher in responders (n=10) compared to non-responders (n=11) (44 (39-56) vs 28 (16-52) mL/100g/min, P= 0.04), while BV and PS were similar (BV= 4.3 (3.5-6.9) vs 2.0 (1.6-6.5) mL/100g, P= 0.15 and PS= 25 (21-30) vs 20 (10-34) mL/100g/min, P=0.31). RECIST and CA 19-9 showed no correlation with perfusion parameters (e.g. RECIST; BF: r=0.05, P=0.84, 95% confidence interval (CI)= -0.40 to</p>			

0.48; CA 19-9; BF: $r=0.06$, $P=0.78$, 95% CI= -0.39 to 0.49) nor with histopathological response ($r=0.16$, $P=0.47$, 95% CI= -0.3 to 0.57 and $r=0.09$, $P=0.71$, 95% CI= -0.37 to 0.51, respectively). For responders, perfusion parameters increased after CRT (e.g., BF= 54 (42-73) vs 43 (28-53) mL/100 g/min, $P=0.04$). The perfusion change in non-responders was not significant (BF= 43 (28-53) vs 33 (16-52) mL/100 g/min, $P=0.06$).

Conclusion: Perfusion CT may be useful to help predict the histopathologic response to therapy in pancreatic adenocarcinoma.