

# 学位論文審査結果の要旨

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<p>(学位論文審査結果の要旨)</p> <p>Perfusion CT to assess response to neoadjuvant chemoradiotherapy in pancreatic ductal adenocarcinoma: initial experience</p> <p>【主論文審査結果の要旨】</p> <p>著者らは論文において下記の内容を述べている。</p> <p><b>Background</b></p> <p>Change in tumor size on CT is insufficient for reliable assessment of treatment response after neoadjuvant chemoradiation therapy and shows poor correlation with histological grading of response.</p> <p><b>Purpose</b></p> <p>To investigate the use of perfusion CT to predict response of pancreatic ductal adenocarcinoma (PDA) to chemoradiation therapy (CRT).</p> <p><b>Methods and materials</b></p> <p>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><b>Results</b></p> <p>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</p>			

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 .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.

パーフュージョン CT による膵癌の定量的血流評価が、術前化学放射線療法の治療効果を予測する上で有用であることを示した論文で、学術上極めて有益と考えられ、学位論文として価値あるものと認めた。

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