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A High Visceral Fat To Subcutaneous Fat Ratio Predicts A Poor Prognosis In Patients With Resected Pancreatic Ductal Adenocarcinoma

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Background : High visceral to subcutaneous adipose tissue area ratio (VSR) has been reported to be a useful predictor of poor prognosis in various type of cancer. However, the clinical significant of high VSR in pancreatic ductal adenocarcinoma (PDAC) is less well-known. This study aimed to evaluate the relationship between the high VSR and the prognosis of PDAC

Methods : A total of 404 patients who underwent upfront surgery for PDAC from 2004 to 2020 were included in a single center, retrospective study. Visceral fat area (VFA) and subcutaneous fat area (SFA) were measured using the three-dimensional image analysis system. According to VSR (VFA/SFA) with a cut-off value of 0.5, the patients were divided into low VSR (n=142) and high VSR (n=262) groups. Perioperative outcomes and survival outcomes were compared between the two groups.

Results : There are no significant differences in operative and pathological outcomes between low VSR and high VSR groups. The high VSR group had similar 5-year recurrence-free survival to the low VSR group (31.6% vs. 28.9%, P=0.542), but had significantly lower 5-year overall survival than the low VSR group (35.3% vs. 21.0%, P=0.004). In the high VSR group, a significant number of patients died from worsening of comorbidities rather than cancer progression.

Conclusions : High VSR was associated with decreased survival related to worsening of comorbidities in patients with PDAC. Future studies should be conducted to investigate whether exercise and nutritional interventions for patients with high VSR can prolong the overall survival in patients with resected pancreatic cancer.

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