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## The Diagnostic Value Of 18F-FAPI-74 PET/CT In Detecting Primary Pancreatic Ductal Adenocarcinoma Lesion And Metastatic Lymph Node Compared To 18F-FDG-PET/CT

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**Background** : Pancreatic ductal adenocarcinoma (PDAC) is a highly lethal cancer, and accurate staging is critical to establish treatment strategies. The efficacy of 18F-fluorodeoxyglucose (FDG)-positron emission tomography/computed tomography (PET/CT) in clinical staging is still unclear, however functional PET/CT detecting fibroblast activation protein (FAP) more specific to PDAC than glucose metabolism has been conducted in a few studies. Therefore, we aimed to evaluate the efficacy of 18F-FAPI (FAP inhibitor)-74-PET/CT in clinical staging of PDAC.

**Methods** : Between 2021 and 2022, twenty patients with histologically diagnosed PDAC were enrolled and examined by 18F-FDG-PET/CT (60 minutes), early (60 minutes) and delayed (120 minutes) 18F-FAPI-74-PET/CT. Pathologic information was available in 18 patients who underwent curative-intent pancreatectomy. Radiotracer uptake and diagnostic performance were compared among imaging methodologies.

**Results** : Both early (median [interquartile range], 8.26 [7.66-8.98]) and delayed (7.85 [6.78-8.53]) 18F-FAPI-74-PET/CT showed significantly higher mean standardized uptake value (SUVmean) than 18F-FDG-PET/CT (3.83 [2.77-5.49]) in evaluating primary pancreatic lesions ( $P < 0.001$ ). In contrast, both early (0.99 [0.89-1.09]) and delayed (0.76 [0.71-0.93]) 18F-FAPI-74-PET/CT showed significantly lower SUVmean than 18F-FDG-PET/CT (2.58 [2.30-2.72]) in evaluating background organ ( $P < 0.001$ ). In addition, sensitivity of early and delayed 18F-FAPI-74-PET/CT (54.5%) in detecting metastatic lymph nodes was higher than that of 18F-FDG-PET/CT (0.0%).

**Conclusions** : 18F-FAPI-74-PET/CT is more sensitive in detection of primary tumors and metastatic lymph nodes than 18F-FDG-PET/CT. 18F-FAPI-74-PET/CT could be used as a standard work for staging of PDAC with its improved diagnostic value.

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