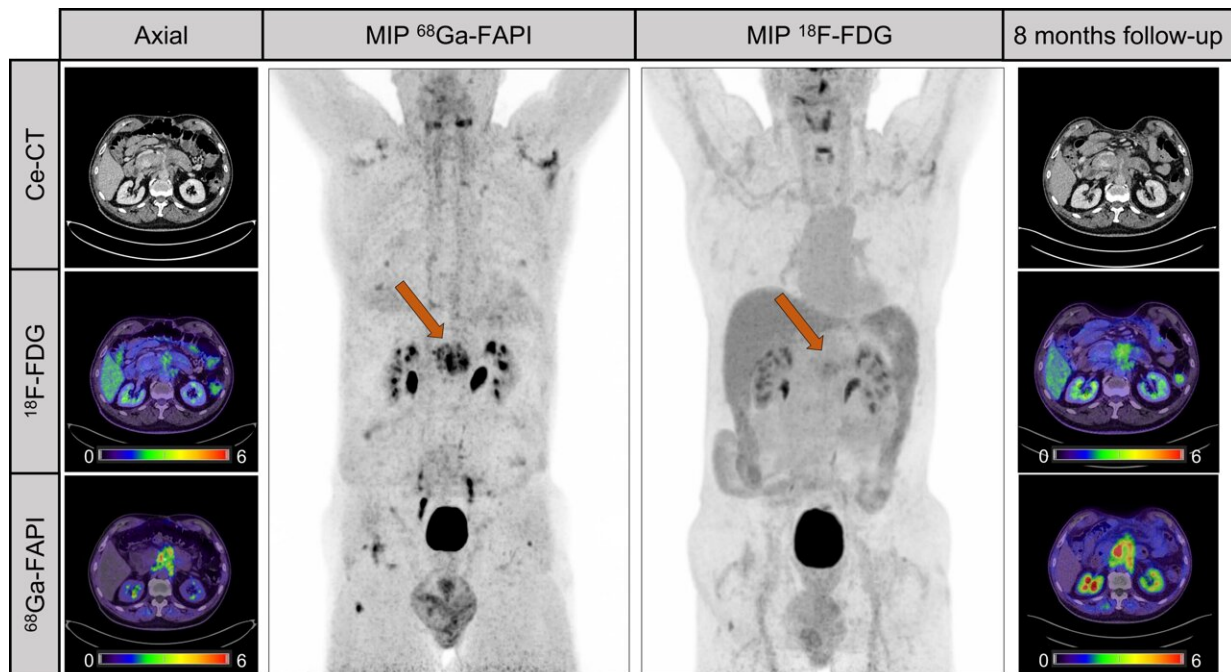


Ga-68 FAPI PET found to improve detection and staging of pancreatic cancer

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Case presentation. Male patient with suspected recurrent pancreatic cancer. Ce-CT shows mass around superior mesenteric artery after pancreatectomy. ¹⁸F-FDG only shows discrete uptake of lesion (SUVmax, 3.8), whereas ⁶⁸Ga-FAPI clearly visualizes recurrent tumor. Patient received adjuvant chemotherapy after ⁶⁸Ga-FAPI. Patient denied recommended chemotherapy. Increase of CA19-9 levels (from 240 to 767 U/mL) and follow-up imaging 8mo later validated progression of mesenteric mass as well as increased ¹⁸F-FDG uptake (SUVmax, 5.3). MIP 5 maximum-intensity projection. Credit: L. Kessler, MD, University Hospital Essen, Essen, Germany.

PET imaging with ^{68}Ga -FAPI can more effectively detect and stage pancreatic cancer as compared with ^{18}F -FDG imaging or contrast-enhanced CT, according to recent research [published](#) in the December 2023 issue of *The Journal of Nuclear Medicine*.

In a head-to-head study, ^{68}Ga -FAPI detected more [pancreatic tumors](#) on a per-lesion, per-patient, or per-region basis and led to major and minor changes to clinical management of patients. In addition to enhancing precise detection of pancreatic [cancer](#), ^{68}Ga -FAPI imaging also paves the way for future targeted radiopharmaceutical therapies.

Approximately 64,000 Americans are diagnosed with pancreatic cancer each year. The disease is often diagnosed in advanced or metastasized stages and, as a result, is associated with extremely poor survival.

"Existing [diagnostic approaches](#) and workups are not sufficient for early detection of pancreatic cancer in curative stages for most patients," said Jens T. Siveke, MD, translational and GI oncologist of the German Cancer Consortium (DKTK) at the West German Cancer Center in Essen, Germany. "Consequently, there is a pressing need for earlier and more precise disease detection, as well as a demand for novel targeted therapies."

Recent studies have demonstrated high radiotracer uptake of ^{68}Ga -FAPI in pancreatic cancer lesions; however, the precise diagnostic accuracy and the correlation of the tracer remain unexplored. In this study, researchers sought to provide comprehensive data on the diagnostic performance of ^{68}Ga -FAPI in pancreatic cancer patients.

Sixty-four patients with suspected or proven pancreatic cancer were included in the study. All patients underwent ^{68}Ga -FAPI PET and contrast-enhanced CT, and 38 of the patients also underwent ^{18}F -FDG PET. Researchers observed the association of the ^{68}Ga -FAPI PET

uptake intensity and histologic FAP (fibroblast activation protein) expression. The detection rate, diagnostic performance, inter-reader reproducibility, and change in management were also analyzed.

The association between ^{68}Ga -FAPI PET uptake intensity and FAP expression was found to be significant, and ^{68}Ga -FAPI PET showed high sensitivity and positive predictive values. In a head-to-head comparison with ^{18}F -FDG and contrast-enhanced CE, ^{68}Ga -FAPI PET detected more tumors on a per-lesion (84.7 vs. 46.5 vs. 52.9 percent), per-patient (97.4 vs. 73.7 vs. 92.1 percent), or per-region (32.6 vs. 18.8 vs. 23.7 percent) basis, respectively. ^{68}Ga -FAPI PET readers showed substantial overall agreement, and minor and major changes in clinical management occurred in nearly 10 percent of patients after ^{68}Ga -FAPI PET.

"Our research suggests that ^{68}Ga -FAPI could become a building block in the diagnostic work-up of [pancreatic cancer](#) to improve early detection and accurate staging of this disease," noted Lukas Kessler, MD, resident in the Department of Nuclear Medicine at University Hospital Essen in Germany. "Furthermore, our results support further investigation of FAP as a potential theranostic target of the tumor microenvironment, which represents an exciting new avenue in combating this enigmatic and fatal disease."

More information: Lukas Kessler et al, ^{68}Ga -Labeled Fibroblast Activation Protein Inhibitor (^{68}Ga -FAPI) PET for Pancreatic Adenocarcinoma: Data from the ^{68}Ga -FAPI PET Observational Trial, *Journal of Nuclear Medicine* (2023). [DOI: 10.2967/jnumed.122.264827](https://doi.org/10.2967/jnumed.122.264827)

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