# New Metabolite-based Diagnostic Test Could Help Detect Pancreatic Cancer Early

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- Test requires measurement of certain metabolite levels in patients' blood.
- Diagnostic test showed high sensitivity and specificity.

PHILADELPHIA — A new diagnostic test that uses a scientific technique known as metabolomic analysis may be a safe and easy screening method that could improve the prognosis of patients with pancreatic cancer through earlier detection.

Researchers examined the utility of metabolomic analysis as a diagnostic method for pancreatic cancer and then validated the new approach, according to study results published in *Cancer Epidemiology, Biomarkers & Prevention*, a journal of the American Association for Cancer Research.

"Although surgical resection can be a curative treatment for pancreatic cancer, more than 80 percent of patients with pancreatic cancer have a locally advanced or metastatic tumor that is unresectable at the time of detection," said Masaru Yoshida, M.D., Ph.D., associate professor and chief of the Division of Metabolomics Research at Kobe University Graduate School of Medicine in Kobe, Japan. "Conventional examinations using blood, imaging and endoscopy are not appropriate for pancreatic cancer screening and early detection, so a novel screening and diagnostic method for pancreatic cancer is urgently required."

Using gas chromatography mass spectrometry, the researchers measured the levels of metabolites in the blood of patients with pancreatic cancer, patients with chronic pancreatitis and healthy volunteers. They randomly assigned 43 patients with pancreatic cancer and 42 healthy volunteers to a training set and 42 patients with pancreatic cancer and 41 healthy volunteers to a validation set. They included all 23 patients with chronic pancreatitis in the validation set.

Analysis of the metabolomic data generated from the training set indicated that levels of 18 metabolites were significantly different in the blood of patients with pancreatic cancer compared with the healthy volunteers. Further investigation led the researchers to develop a method to predict a pancreatic cancer diagnosis using assessment of the levels of just four metabolites. In the training set, the approach demonstrated 86 percent sensitivity and 88.1 percent specificity. When tested again in the validation set, which included patients with chronic pancreatitis, the method demonstrated 71.4 percent sensitivity and 78.1 percent specificity.

"Our diagnostic approach using serum metabolomics possessed higher accuracy than conventional tumor markers, especially at detecting the patients with pancreatic cancer in the cohort that included the patients with chronic pancreatitis,"

Yoshida said. “This novel diagnostic approach, which is safe and easy to apply as a screening method, is expected to improve the prognosis of patients with pancreatic cancer by detecting their cancers early, when still in a resectable and curable state.”

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