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Molecular marker from pancreatic 'juices' helps identify pancreatic cancer

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Researchers at Mayo Clinic have developed a promising method to distinguish between pancreatic cancer and chronic pancreatitis—two disorders that are difficult to tell apart. A molecular marker obtained from pancreatic "juices" can identify almost all cases of pancreatic cancer, their study shows. The findings were being presented at Digestive Disease Week 2013 in Orlando, Fla.

"Many researchers have been working on such a diagnostic test for a long time—for me, it has been 20 years," says lead investigator Massimo Raimondo, M.D., a gastroenterologist at Mayo Clinic in Florida. "But for the first time, we have found a very strong candidate molecular marker.

"We all want a foolproof method to detect pancreatic cancer in our patients so that we can deliver appropriate therapy, as soon as possible," Dr. Raimondo adds. "While we know more research is needed, including validation of our findings, we can't help but be excited about this advance."

Pancreatic cancer and chronic pancreatitis both produce the same signs of disease in the pancreas, such as inflammation, but cancer in the organ is a life-threatening disorder that must be treated immediately and aggressively, Dr. Raimondo says.

The research team, which included investigators from Mayo Clinic in Rochester, Minn., tested a method that examined secretions from the pancreas during a routine upper endoscopy.

In patients suspected of having chronic pancreatitis or pancreatic cancer, physicians use a thin flexible scope to examine the upper digestive tract. In this study, during such routine endoscopies, physicians injected the substance secretin intravenously, to fool the pancreas into believing the stomach contains food that the pancreas needs to help digest. The organ then secreted juice rich in enzymes to help break down the food, along with exfoliated cells, and the researchers collected some of this fluid.

They examined the juice for markers that might distinguish the two disorders, and discovered that the altered gene CD1D, as a single marker, detected 75 percent of patients later diagnosed with pancreatic cancer, but was present in only 9 percent of patients with chronic pancreatitis.

"CD1D performed much better than any other pancreatic secretion marker previously tested in identifying pancreatic cancer," Dr. Raimondo says.

The research team is working on further improving the accuracy of this promising molecular diagnostic approach.

"These results on Dr. Raimondo's carefully collected samples are really exciting and have clear practice-changing implications," says co-author David Ahlquist, M.D., who led the collaborating laboratory team at Mayo Clinic in Rochester. Diagnostic accuracy well above 90 percent is possible, he says.

When such a biomarker test is perfected, it could be used not only to distinguish pancreatic cancer from chronic pancreatitis, but, potentially, as a screening test for patients at high risk for pancreatic cancer, Dr. Raimondo says.

Provided by Mayo Clinic