New pathology tests double sensitivity to detect bile duct and pancreatic cancers

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Pancreatic cancer and bile duct cancer are difficult to diagnose and often fatal because they are discovered in the advanced stages of the disease. Researchers have developed new tests that double the ability to detect bile duct and pancreatic cancers, according to a Mayo Clinic study published in the June issue of *Gastroenterology*.

Pancreatobiliary tumors such as bile duct cancer (cholangiocarcinoma) and pancreatic cancer often present as strictures, or a narrowing of the duct that can either be caused by benign inflammation or cancer. Physicians insert an endoscope down the throat and into the bile duct and pancreas region to examine possible tumors; however, the narrowness of the bile duct makes it difficult to distinguish benign and malignant strictures.

In this study, 498 patients with pancreatobiliary duct narrowing underwent an endoscopic procedure, and cell brushings were taken. Brushings were then analyzed by routine cytology, digital image analysis and fluorescence in situ hybridization (FISH) to determine the various tests' effectiveness and sensitivity in detecting and diagnosing cancer. While traditional cytology analysis relies on identifying abnormally shaped cells, the FISH test detects malignant cells using colored probes visible with a fluorescence microscope. Since cancer cells have an abnormal amount of DNA, by FISH these cells show extra copies of the probes compared to normal cells. The Mayo research team found that the combination of cytology and FISH raised the detection rate of bile duct and pancreatic cancer from 20 percent to 43 percent. "Bile duct and

pancreatic cancers are very difficult to diagnose," says Lewis Roberts, M.B.Ch.B., Ph.D., Mayo Clinic gastroenterologist and the study's senior author.

"We were very pleased to see that the combination of FISH and cytology significantly improved our chances of diagnosing patients reliably. The earlier we can diagnose a patient, the better the types of treatment we can offer and the more likely they are to have long-term survival after treatment."

Treatments for bile duct cancer vary with the size of the tumor and how far it has advanced. These tumors usually grow slowly and spread gradually. In many cases, bile duct cancers are diagnosed at later stages. Current treatments include surgery, liver transplantation, chemotherapy, radiation therapy, photodynamic therapy and biliary drainage with plastic or metal stents. If the cancer cannot be completely removed by surgery but has not spread outside the liver, chemotherapy and radiation followed by liver transplantation may be an option. Mayo Clinic is one of the few medical facilities that offers a liver transplant protocol for early-stage bile duct cancer patients.

Bile duct cancer is rare and is most common in people aged 50 to 70. Approximately 5,000 cases of bile duct cancer are diagnosed in the United States each year, and the incidence of bile duct cancer is on the rise. Between 35,000 and 40,000 cases of pancreatic cancer are diagnosed per year in the United States.

Source: Mayo Clinic (news : web)