Pancreatic cancer markers identified, may predict survival

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Scientists have discovered a way to distinguish pancreatic cancer from non-cancerous tissue, new research shows.

The method may also distinguish patients who will survive longer than two years.

The research examined pancreatic cancer cells for tiny molecules called microRNA (miRNA). It shows that relative levels of certain miRNAs can distinguish pancreatic cancer from nearby noncancerous tissue and from inflamed pancreatic tissue.

The study by researchers at Ohio State University Comprehensive Cancer Center, is published in the May 2 issue of the Journal of the American Medical Association.

"Our findings suggest that miRNAs might help detect the disease earlier and differentiate it from noncancerous conditions," says first author Mark Bloomston, assistant professor of surgery at Ohio State's James Cancer Hospital and Solove Research Institute.

"We also found that we could predict which patients would do better or worse based on a just a few miRNAs. Such correlations with survival have previously been lacking in pancreatic cancer," Bloomston says.

Pancreatic cancer is expected to strike 37,170 Americans and to kill 33,370 others this year, making it the fourth-leading cause of cancer

death in both men and women. The number of new cases nearly equals the number of deaths because the disease is difficult to diagnosis early and because there have been few treatment advances.

For this study, Bloomston and his colleagues examined tumor samples from 65 patients with adenocarcinoma of the pancreas, the most common form of the disease.

They extracted miRNA from isolated tumor cells and from adjacent noncancerous pancreatic tissue. In addition, they isolated miRNA from the pancreatic cells of people who had undergone surgery for chronic pancreatitis, an inflammation of the pancreas often associated with pancreatic cancer.

Perhaps surprisingly, the miRNAs that could discriminate between long- and short-term survivors were not among those that were specific to pancreatic cancer.

"These miRNAs have not been studied much, so we don't know how important they will ultimately be," Bloomston says. "Our findings are really just a starting point. Now we and others need to validate the role of these molecules in pancreatic cancer and to study what they do."

MicroRNAs, first discovered less than 15 years ago, help control the type and quantity of proteins that cells naturally make by modifying other genes. Research over the past few years has shown that they also play an important role in cancer. More than 300 different human miRNAs have been identified so far.

Source: Ohio State University