

Genetic Variations May Predict the Effectiveness of Treatment for People with Pancreatic Cancer

The study: Researchers performed a DNA analysis on blood samples from 154 patients with pancreatic adenocarcinoma who could possibly receive surgery as a treatment. These patients were already participating in a clinical trial to test the benefit of radiation therapy and chemotherapy with the drug gemcitabine (Gemzar) before surgery. Pancreatic adenocarcinoma is the most common type of pancreatic cancer and begins in the ducts and acini (small sacs on the end of the ducts).

In this study, researchers specifically looked at 15 combinations of DNA found in eight different mismatch repair genes. A mismatch repair gene makes proteins that repair DNA mistakes caused by cancer treatment. When these genes malfunction, the tumor can become resistant to chemotherapy, meaning that the treatment no longer works. Researchers thought that a person with pancreatic cancer and normal functioning mismatch repair genes would have a better prognosis (chance of recovery) than those with malfunctioning mismatch repair genes.

The results: The patients were divided into groups based on how many of the malfunctioning mismatch repair genes they had to determine if the number of malfunctioning genes was associated with a patient's length of survival. Malfunctioning mismatch repair genes were associated with less successful treatment, a tumor that was less likely to be removed using surgery, or reduced survival. Researchers found that survival time decreased as the number of malfunctioning genes increased. For example, patients with two malfunctioning genes survived for about 36 months compared with about 8 months for patients with six to seven malfunctioning genes. Of the patients who had only one or no malfunctioning genes, 80% were still alive three to five years after being diagnosed.

What this means for patients

“Some patients who are treated for pancreatic cancer do better than others, and these findings help us to understand why this is the case,” said lead author Donghui Li, PhD, Professor in the Department of Gastrointestinal Medical Oncology at the University of Texas M.D. Anderson Cancer Center. “As we dig deeper into genetics and personalized medicine, we are gaining new insights into the genetic differences between patients who are successfully treated and those who are not. Such findings will eventually help us to select the best treatment for each patient.” Genetic testing for genes that can predict treatment for pancreatic cancer may be available only in clinical trials (research studies involving people). Talk with your doctor about your prognosis and available treatment options, including participation in clinical trials.

What to Ask Your Doctor

- What is the stage of my cancer? What does this mean?
- What treatment options are available to me?
- What clinical trials are open to me?
- What is my prognosis?

For More Information

[Cancer.Net Guide to Pancreatic Cancer \[1\]](#)

[Genetics \[2\]](#)

Links:

[1] <http://www.cancer.net/node/19495>

[2] <http://www.cancer.net/node/24864>