

Improving survival in pancreatic cancer with platinum-based chemotherapy

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Credit: AI-generated image ([disclaimer](#))

A small study of adults with the most common form of pancreatic cancer adds to evidence that patients with BRCA1 or BRCA2 gene mutations long linked to a high risk of breast cancer have poorer overall survival rates than those without the mutations.

The same study also found that those with BRCA1 or BRCA2 had better survival rates with [platinum-based chemotherapy](#), compared with similar patients who received other drugs or no [chemotherapy](#).

In a report published in the April issue of *Journal of the American College of Surgeons*, investigators at Johns Hopkins Medicine who conducted the study say the findings highlight the potential for matching targeted therapies to subsets of pancreatic [cancer](#) patients based on their genetic makeup.

"Current therapies and survival rates for those with pancreatic ductal adenocarcinomas (PDAC) are poor to begin with, so any finding such as ours that potentially tailors better treatments for some patients is exciting," says Alex Blair, M.D., a surgery fellow at the Johns Hopkins University School of Medicine and the study's first author.

Current standard of care for PDAC, he says, is surgical removal of the whole tumor, but only an estimated 20 percent of such patients are good candidates for that operation because the vast majority of the cancers are without symptoms and undiagnosed until they have spread to other organs.

For the study, Blair and his colleagues analyzed noncancerous tissue from 658 people with sporadic PDAC, or PDAC that presents without a family history. All of the patients had been operated on between 2000 and 2015 at The Johns Hopkins Hospital.

Of the 658 patients with PDAC, 22 (3 percent) had BRCA1/2 mutations in their DNA. These patients were matched by age and anatomic tumor locations to 105 of the other patients who did not carry either mutation. The mid-range age for both groups was 61 years and 62 (49 percent) were male.

Each of the individuals in the mutation and control groups received a CT scan every four to six months for the first two years following tumor removal, then yearly after. The researchers calculated overall survival time from the date of diagnosis to the date of death or stopped at the date of the last follow-up.

Disease-free survival was calculated from time of surgery to the documented date of recurrence or stopped at the last date of follow-up.

Pancreatic cancer patients with BRCA1/2 abnormalities saw worse overall survival (on average 20.2 months versus 27.8 months) and disease-free survival (on average 8.4 months versus 16.7 months) than pancreatic cancer patients without such abnormalities.

However, the researchers also found that patients who received platinum-based chemotherapy after surgery had overall better survival rates than patients who received other types of chemotherapy or no chemotherapy at all.

Of the 22 pancreatic cancer patients with BRCA1/2 irregularities, 10 received platinum-based chemotherapy, eight received alternative chemotherapy and four received no chemotherapy after surgery. The average [survival rates](#) were 31 months, 17.8 months and 9.3 months, respectively.

While the authors acknowledge study limitations such as the use of self-report of family history, the small number of patients, and potentially missed data about chemotherapy regimens because patients often opt to receive chemotherapy elsewhere, they say the findings potentially serve as a step forward in precision medicine techniques that match patients to the best possible treatments.

"There's a growing push to sequence tissue from all [patients](#) with

pancreatic cancer to better define biological and other patterns in outcomes and help improve treatment decisions," says Blair.

According to the American Cancer Society, approximately 55,440 people will be diagnosed with [pancreatic](#) cancer in 2018 and 44,330 of those will die. Although [pancreatic cancer](#) accounts for only 3 percent of all cancers in the United States, it is the fifth leading cause of cancer deaths.

More information: Alex B. Blair et al. BRCA1/BRCA2 Germline Mutation Carriers and Sporadic Pancreatic Ductal Adenocarcinoma, *Journal of the American College of Surgeons* (2018). [DOI: 10.1016/j.jamcollsurg.2017.12.021](#)

Provided by Johns Hopkins University

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