Targeted treatments for pancreatic cancer may help eligible patients live an extra year

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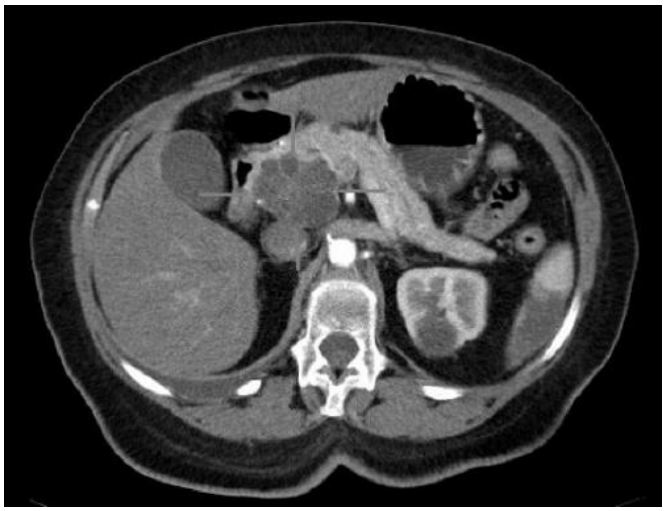

Axial CT image with i.v. contrast. Macrocystic adenocarcinoma of the pancreatic head. Credit: public domain

Results from 46 patients given treatments that target specific molecular changes in tumour cells suggest that these therapies could help patients with pancreatic cancer whose tumours harbour those changes survive an extra year.

Patients with molecular changes in their tumours who received a targeted therapy alongside other treatment survived for an average of one year longer after being diagnosed with advanced disease compared with patients who received standard chemotherapy (survival of 31 vs 18 months), according to an observational study published in *The Lancet Oncology* journal.

Pancreatic cancer is often diagnosed late and there are few treatment options available. Previous studies have shown that up to a quarter of patients have molecular alterations in their tumours that could potentially be treated with targeted therapies. The new study is the first to show that this approach could be a successful treatment option for people with a pancreatic tumour that has molecular alterations.

One limitation to the study is that many of the patients who received a targeted therapy were also treated with other therapies at the same time, making it difficult to definitively determine the precise benefits of this approach over standard care. However, because both groups received chemotherapy, the only variable was whether or not the patients also received the molecularly targeted therapy.

Dr. Michael Pishvaian, of The University of Texas MD Anderson Cancer Centre, USA, said: "Although only a small number of patients in this study received a targeted therapy, the results are promising. No other type of therapy has offered a survival benefit of this magnitude to patients with pancreatic cancer. Our findings suggest that adopting a precision medicine approach, where patients are given a therapy targeted to the specific conditions of their tumour, could have a substantial effect on survival prospects for these patients."

Targeted therapies work by targeting the specific molecular changes inside tumour cells that contribute to cancer growth and survival, unlike chemotherapy that works more generally against cancer cells. Targeted therapy has already helped improve survival for many forms of cancer, such as PARP inhibitors for ovarian cancer and Herceptin for breast cancer.

However, the new study is the first to assess the benefits of targeted therapies for patients with pancreatic cancer, by analysing information from patients who had been prescribed targeted therapy by their own doctors.

The number of patients with pancreatic cancer carrying a particular molecular alteration are too low to carry out a clinical trial. However, as there

are often no other treatment options for pancreatic cancer, in some countries doctors are permitted to prescribe therapies that have been approved for use in other types of cancer, a practice known as using a drug off-label. In this case, the use of targeted therapies off-label can be justified if the patient's tumour carries the same molecular alteration as the type of cancer the drug was approved for.

In this study, the authors carried out a retrospective analysis of data from the Pancreatic Cancer Action Network's Know Your Tumour programme, a registry of patients with pancreatic cancer from across the USA who had undergone molecular testing of their tumours.

Around a quarter of pancreatic cancer patients registered in the programme who received molecular testing (282 of 1,082) were found to have tumours that harboured molecular changes that were potentially susceptible to targeted therapies. Treatment outcomes were only available for 189 of these patients because some had died before the report could be delivered and others had no documented information about their treatment.

Of those, 46 patients had received a targeted therapy matched to the specific molecular change associated with their tumour.

The researchers found the average survival for those who received a targeted therapy was a little over two and a half years (31 months). Average survival for patients who did not have one of the molecular changes for which a targeted therapy exists, and had been treated with standard chemotherapy, was 16 months.

143 patients were eligible for a targeted therapy, because they had tumours carrying one of the relevant molecular changes, but had been given standard chemotherapy alone. Their average survival was 18 months.

Lynn Matrisian, co-author of the study and Chief Scientific Officer of The Pancreatic Cancer Action Network, USA, said: "Access to high-quality molecular testing is variable. Future efforts should focus on addressing barriers to molecular testing so that more people can benefit from this personalised approach to cancer treatment. We will continue to work to close that gap through our Know Your Tumour programme and through patient and healthcare professional outreach and education."

In addition, some 351 patients who had received molecular testing were not included in the final analysis owing to missing data on their initial treatment before they entered the study. This could affect the overall survival results but the researchers expect findings would be similar in this group.

Writing in a linked Comment, lead author Professor Jörg Kleeff (who was not involved in the study) from the Martin-Luther-University Halle-Wittenberg, in Germany, said: "There will be a number of important questions to be addressed. These will comprise technical details regarding sequencing of tumour tissues and of germline material but also clinical questions such as timing of treatment, choosing the right chemotherapy (backbone), as well as combination treatment regimens."

Pancreatic cancer is one of the hardest cancers to treat. It is often diagnosed late and survival rates are low, with fewer than one in ten patients surviving for five years or more after diagnosis. Globally, there were 458,918 new cases reported in 2018. This study is publishing at the same time as a cross journal series from *The Lancet Oncology*, *The Lancet Gastroenterology & Hepatology*, and *EBioMedicine* on pancreatic cancer, tackling these challenges and highlighting the progress being made in all areas of pancreatic cancer research (series available under embargo via links below).

More information: Michael J Pishvaian et al, Overall survival in patients with pancreatic cancer receiving matched therapies following molecular profiling: a retrospective analysis of the Know Your Tumor registry trial, *The Lancet Oncology* (2020). DOI: 10.1016/S1470-2045(20)30074-7

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