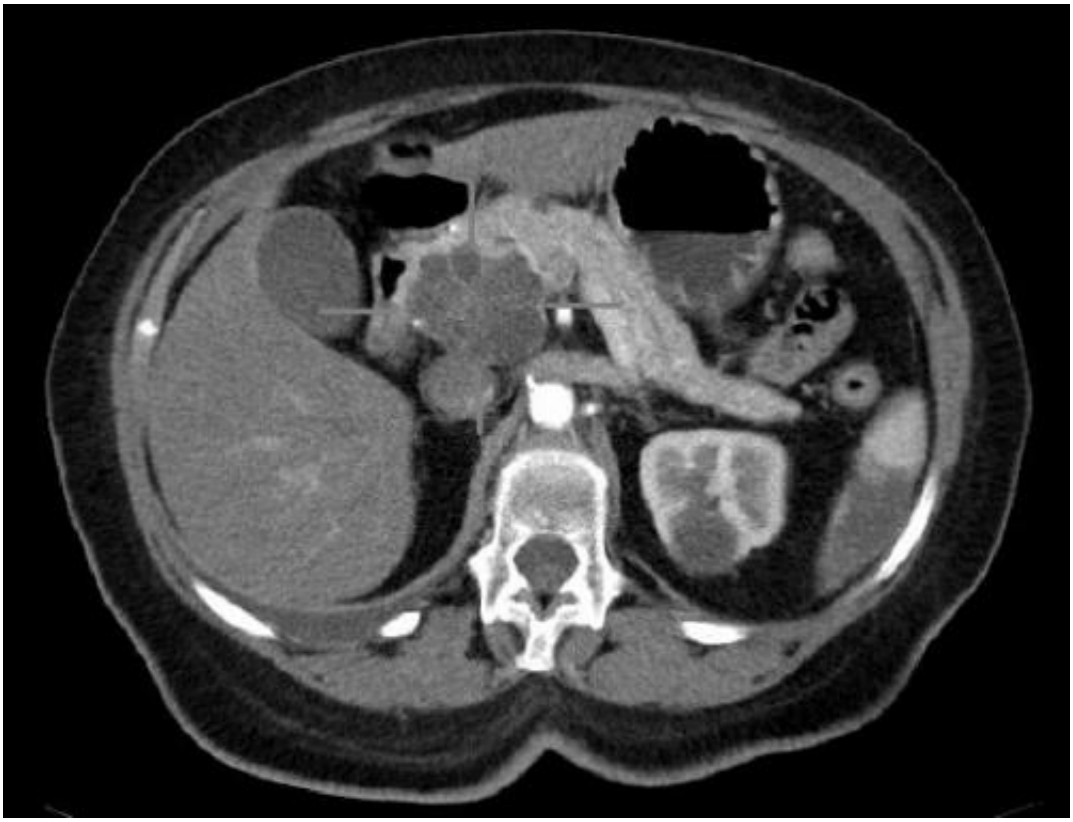
Diabetes or its rapid deterioration can be an early warning sign for pancreatic cancer

January 30 2017



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

Patients and their doctors should be aware that the onset of diabetes, or a rapid deterioration in existing diabetes that requires more aggressive treatment, could be a sign of early, hidden pancreatic cancer, according

to research presented at the European Cancer Congress 2017 today (Monday).

Ms Alice Koechlin, from the International Prevention Research Institute in Lyon, France, told the meeting that an analysis linking nearly a million patients with type 2 diabetes in Lombardy (Italy) and Belgium with recorded cases of pancreatic cancer showed that 50% of all pancreatic cancers cases in the two regions were diagnosed within one year of patients being diagnosed with type 2 diabetes and being given their first prescription to control it.

"In Belgium 25% of cases were diagnosed within 90 days and in Lombardy it was 18%. After the first year, the proportion of diagnosed pancreatic cancers dropped dramatically," she said. The researchers found that compared with patients who were able to continue with oral anti-diabetic drugs, patients in Belgium and in Lombardy had a 3.5-fold greater risk of being diagnosed with pancreatic cancer in the first three months after their first prescription for incretins (metabolic hormones that stimulate the pancreas to produce more insulin to lower blood glucose levels); this fell to a 2.3-fold risk in the next three to six months, to a two-fold risk for the next six to 12 months and 1.7-fold risk after the first year.

Among patients who already had type 2 diabetes and were managing it with oral anti-diabetic drugs, the switch to incretins or insulin happened faster among diabetic patients who were subsequently diagnosed with pancreatic cancer. In addition, a deterioration in their condition that necessitated them being switched to more aggressive anti-diabetic therapy with injections of insulin was associated with a seven-fold increased risk of being diagnosed with pancreatic cancer.

Ms Alice Koechlin, Professor Philippe Autier (also from the International Prevention Research Institute) and colleagues in Belgium

and Italy used prescription data to identify 368,377 patients with type 2 diabetes in Belgium between 2008 and 2013 and 456,311 patients in Lombardy between 2008 and 2012. The data were linked to pancreatic cancer cases in the Belgian Cancer Registry and the hospital discharge databases in Lombardy. There were 885 and 1,872 cases of pancreatic cancer diagnosed during this time in Belgium and Lombardy respectively.

Ms Koechlin Autier said: "Although it has been known for some time that there is an association between type 2 diabetes and pancreatic cancer, the relationship between the two conditions is complex. Incretin therapies reduce diabetic hyperglycemia through stimulating the release of insulin by the pancreas. These drugs are typically prescribed when the oral anti-diabetic drugs can no longer control blood glucose levels. Because of their stimulating effects on the pancreas, it has long been thought that the incretin therapies could promote the occurrence of pancreatic cancer. However, it is known that pancreatic cancer can cause diabetes. Our study shows that incretin therapies are often prescribed to patients whose diabetes is caused by a still undiagnosed pancreatic cancer. Because the pancreatic cancer finally becomes symptomatic and is thus diagnosed, it looks like it is the intake of incretin drugs that could be the trigger of the pancreatic cancer, while in reality, it is the pancreatic cancer that causes a deterioration of diabetes, which is followed by the prescription of incretins. This phenomenon is called 'reverse causation'. Our study also shows that the reverse causation observed for incretin drugs is also observed for other anti-diabetic therapies, in particular for insulin therapy.

"Doctors and their diabetic patients should be aware that the onset of diabetes or rapidly deteriorating diabetes could be the first sign of hidden pancreatic cancer, and steps should be taken to investigate it."

However, investigating whether or not a patient has undiagnosed

pancreatic cancer is difficult, and the researchers say that using prescription databases in the way that they have could help to develop methods to identify which patients may have early, non-symptomatic pancreatic cancer.

"There is currently no good, non-invasive method for detecting pancreatic cancer that is not yet showing any visible signs or symptoms. We hope that our results will encourage the search for blood markers indicating the presence of pancreatic cancer, which could guide decisions to perform a confirmation examination like endoscopy," concluded Ms Koechlin.

Pancreatic cancer is one of the most lethal cancers, partly because it is difficult to detect at an early stage and because there are few effective treatments for it. Less than one per cent of people live for ten or more years after a diagnosis. In Europe around 104,000 new cases were diagnosed in 2012 and approximately the same number of people died from it. Worldwide there were an estimated 338,000 cases of pancreatic cancer diagnosed in 2012 and 330,000 people died from it.

Chair of the Congress and President of ECCO, Professor Peter Naredi, from the Sahlgrenska Academy, University of Gothenburg, Sweden, who was not involved with the research, commented: "Due to the severity of pancreatic cancer and because only a minority of cases are detected at a curable stage, we must find better ways for early detection. Some advances have been made in the search for blood biomarkers. The study by Autier and colleagues opens up the possibility to combine the diagnosis of an associated disease, type 2 diabetes, with blood biomarkers. It is a step in the right direction if we can increase the proportion of early diagnosed pancreatic cancers."

More information: Abstract no: 540, Proffered papers gastrointestinal malignancies session, 09.00-10.15 hrs (CET) Monday 30 January, Room

Varmus.

Provided by ECCO-the European CanCer Organisation