

Type-2 diabetics risk developing PC

IN 2015, there were 393,800 reported cases and 411,600 deaths globally due to pancreatic cancer (PC). The most common, pancreatic adenocarcinoma, accounts for about 85 per cent of cases and the term "PC" is sometimes used to refer to that type. Several other types of cancer, which collectively represents the majority of the non-adenocarcinoma, can also arise from these cells. One to two per cent of cases of PC are neuroendocrine tumours, which arise from the hormone producing cells of pancreas. These are generally less aggressive than pancreatic adenocarcinoma. PC rarely occurs before the age of 40, and more than half the cases of pancreatic adenocarcinoma occur in those over 70. Risk factors for PC include tobacco smoking, obesity, diabetes and certain rare genetic conditions. Signs and symptoms of the most common form of PC may include yellow skin, abdominal or back pain, unexplained weight loss, light coloured stool, dark urine and loss of appetite. There are usually no symptoms in the disease's early stages and symptoms that specific enough to suggest PC typically do not develop until the disease has reached an advanced stage. By the time of diagnosis, PC has often spread to other parts of the body. Diagnosis by medical imaging, such as ultrasound or computed tomography, blood tests and examination of tissue samples (biopsy). Disease is divided into stages, from early stage (stage 1) to late stage (stage IV). Treatment with surgery, radiotherapy, chemotherapy and palliative care. Treatment option are partly based on cancer stage. Prevention, avoid smoking, maintaining a healthy weight and limiting the consumption of red or processed meat. This paper provides current notions on the diagnosis and management of PC.

Historical perspectives

The earliest recognition of PC has been attributed to the 18th century Italian scientist Giovanni Battista Morgagni, the historical father of modern-day anatomic pathology, who claimed to have traced several cases of cancer in the

pancreas. Many 18th and 19th century physicians were sceptical about the existence of the disease, given the similar appearance of pancreatitis. Some cases reports were published in the 1820s and 1830s, and a genuine histological diagnosis was eventually recorded by the American clinician Jacob Mendes Da Costa, who also doubted the reliability of Morgagni's interpretations. By the 20th century, cancer of the head of pancreas had become a well-established diagnosis.

Regarding the recognition of PanNETs, the possibility of the islet cells was initially suggested in 1888. The first case of hyperinsulinism due to a tumour of this type was reported in 1927. Recognition of a non-insulin-screening type of PanNETs is generally ascribed to the American surgeons, RM Zollinger and EH Ellison, who gave their names to Zollinger-Ellison syndrome after postulating the existence of a gastrin-screening tumour in a report of two cases of unusually severe peptic ulcers published in 1955. In 2010, the WHO recommended that PanNETs be referred to as "neuroendocrine" rather than "endocrine" tumours.

In 1912, the German surgeon Walther Kausch was first to remove large parts of the duodenum and pancreas together (en bloc). In 1918, it was demonstrated in operations on dogs that total removal of the duodenum is compatible with life, but this was not reported in human surgery until 1935, when the American surgeon Allen Oldfather Whipple published the results of a series of three operations at Columbia Presbyterian Hospital in New York. Only one of the patients had the duodenum totally removed, but he survived for two years before dying of metastasis to the liver.

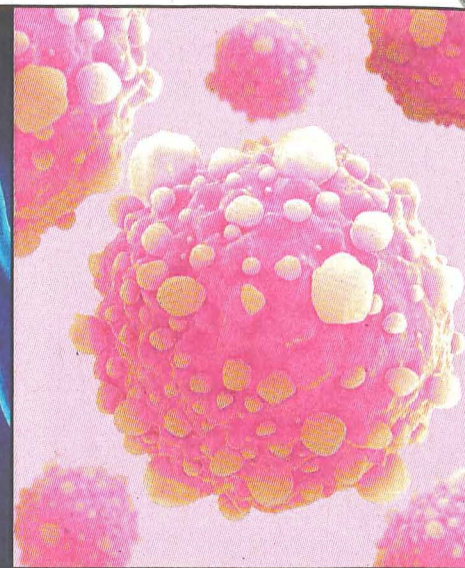
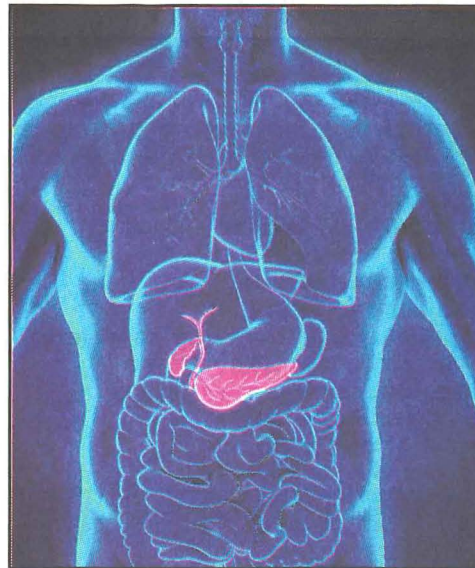
The operation was unplanned, as cancer was discovered in the operating theatre. Whipple's success showed the way for the future, but operation remained a difficult and dangerous one until recent decades. He published several refinements to his procedure, including the first total removal of duodenum in 1940,

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One to two per cent of cases of PC are neuroendocrine tumours (right), which arise from the hormone producing cells of pancreas (left).

but he only performed a total of 37 operations.

The discovery in the late 1930s that vitamin K prevented bleeding with jaundice, and the development of blood transfusion as an everyday process, both improved post-operative survival, but about 25 per cent of people never left the hospital alive as late as the 1970s. In the 1970s a group of American surgeons wrote that procedure was too dangerous and should be abandoned. Since then, outcomes in larger centers have improved considerably, and mortality from operation is often less than 4 per cent. In 2006, a report was published of a series of 1,000 consecutive pancreaticoduodenectomies performed by a single surgeon from John Hopkins Hospital between 1969 and 2003. The rate of these operations had increased steadily over this period, with only three before 1980, and the median operating time reduced from 8.8 hours in the 1970s to 5.5 hours in 2000s, and mortality within 30 days or in hospital was 1 per cent. Another series of 2,050 operations at the Massachusetts General Hospital between 1941 and 2011 showed a similar picture of improvement.

Small precancerous neoplasms for many PCs are being detected at greatly rates by modern medical imaging. One type, intraductal papillary mucinous neoplasm (IPMN) was first described by a Japanese researchers in 1982. It was noted in 201 that "For the next decade, little attention was paid to this report; however, over the subsequent 18 years, there has been a virtual explosion in the recognition of this tumour.

Risk factors

Contributory or risk factors for PC include:

- Age, gender and ethnicity plays an important role, advance age, male gen-

der and ethnicity eg more common in African American than African in their native Africa.

- Smoking cigarette is the best-established avoidable risk factor. The risk declines slowly after smoking cessation, taking some 20 years to return to almost of nonsmokers.

- Obesity, a BMI greater than 35 increases relative risk by about half.

- Family history; 5-10 per cent of PC cases have an inherited component. Risk increases with first degree relative had the disease. The risk increases to 30-40 per cent to age of 70. Screening of early PC may be offered to individuals with hereditary pancreatitis on a research basis.

- Chronic pancreatitis appears to almost triple risk, and as with diabetes, new onset pancreatitis may be symptoms of tumour. The risk of PC in individuals with familial pancreatitis particularly high.

- Diabetes mellitus is a risk factor for PC. People who have been diagnosed with type-2 diabetes for longer than 10 years may have 50 per cent increased risk, as compared with non-diabetic.

- Specific type of food have not been clearly shown to increase the risk of PC. Processed meat, red meat and meat cooked at very high temperature (eg by frying, boiling or barbecuing, shown to have slightly increased risk).

- Alcohol consumption excessively is a major cause of pancreatitis which in turn predisposes to pancreatic cancer. Research has failed to firmly establish alcohol consumption as direct risk factors for PC. Evidence is stronger for a link with heavy drinking of at least six drinks per day.

This series on pancreatic cancer continues next week with a look at the signs and symptoms of the disease