The pancreas is an organ in the digestive system that produces enzymes, which break down food so it can be absorbed and used by the body. It is a thin, lumpy gland about 13 to 15 cm long that lies between your stomach and spine. The pancreas is divided into:

- a large rounded section called the head of the pancreas
- the middle part known as the body
- the narrow end called the tail.

A tube called the pancreatic duct connects the pancreas to the first part of the small bowel (duodenum). Another tube called the common bile duct joins the pancreatic duct and connects the liver and gall bladder to the small bowel. The common bile duct carries bile, a substance that helps to digest fats.

The pancreas contains two types of glands: the exocrine glands and the endocrine glands. These glands release substances that help with digestion.

Exocrine glands produce juices called enzymes that help break down your food. The juices flow from the pancreas into your duodenum through the pancreatic duct. Most of the pancreas is made up of exocrine glands.

Endocrine glands are scattered amongst the exocrine glands in small clusters called pancreatic islets (or islets of Langerhans). They release chemical messengers (hormones) that control the amount of sugar in the blood. The hormone insulin decreases blood sugar levels while the hormone glucagon increases blood sugar levels.

Pancreatic cancer

Pancreatic cancer occurs when malignant cells develop in part of the pancreas. This may affect the normal functioning of the pancreas, including the way the exocrine or endocrine glands work.

About 70 per cent of pancreatic cancers are located in the head of the pancreas. This can block the common bile duct, which will decrease the flow of bile and cause a build-up of bile pigment in the blood. This is known as jaundice.

Cancer can also spread to nearby lymph nodes (part of the immune system), blood vessels or nerves. It may travel through the bloodstream to other parts of the body such as the liver.

Types of pancreatic tumours

There are two types of pancreatic tumours:
Exocrine tumours

More than 90 per cent of pancreatic tumours are exocrine tumours. The most common exocrine tumour, called an adenocarcinoma, begins in the lining of the pancreatic duct. Other types of exocrine tumours include adenosquamous carcinomas and undifferentiated carcinomas.

Pancreatic neuroendocrine tumours (PNETs)

(PNETs) are rare types of tumours affecting the endocrine system. The glands in the endocrine system produce hormones that control the growth of cells in the body.

PNETs are categorised as hormone secreting (functioning) or non-hormone secreting (non-functioning). Functioning tumours are usually named after the type of hormone they secrete.

Types of PNETs include:

- gastrinomas – produce too much gastrin
- insulinomas – produce too much insulin
- glucagonomas – produce too much glucagon
- somatostatinomas – produce too much somatostatin
- VIPomas – create a hormone-like substance called vasoactive intestinal polypeptide (VIP).

How common is it?

About 2,500 Australians are diagnosed with exocrine pancreatic cancer each year. The average age of people diagnosed with this cancer is 71. It is the twelfth most common cancer in men and ninth most common cancer in women.

Pancreatic neuroendocrine tumours are very rare. Less than 100 people in Australia are diagnosed with a PNET each year.

Causes of pancreatic cancer

Pancreatic cancer is caused by abnormally functioning genes. This may be brought on by environmental or genetic risk factors, or a combination of the two.

Research has shown that people with certain risk factors are more likely than others to develop pancreatic cancer.

Risk factors include:

- getting older – pancreatic cancer is most common in people over 65
- smoking – cigarette smokers are two to three times more likely to develop pancreatic cancer
- new onset diabetes – about 15 to 20 per cent of people with pancreatic cancer have newly diagnosed diabetes
- chronic inflammation of the pancreas (pancreatitis)
- a family history of inherited cancer syndromes.

Symptoms

Early stages of pancreatic cancer rarely cause symptoms. Symptoms also may be unnoticed until the cancer is large enough to affect nearby organs.

Symptoms of exocrine pancreatic cancer may include:

- indigestion
- appetite loss
- feeling sick (nausea)
- vomiting
- weight loss
- pain in the upper abdomen, side or back, which may cause
• you to wake up at night
• changed bowel motions – either diarrhoea, severe
• constipation or stools that are pale and hard to flush away
• jaundice which causes yellowish skin and eyes, dark urine,
• pale stools and itchiness
• onset of diabetes within the last two years or worsening
• of existing diabetes: in up to 50 per cent of people with
• pancreatic cancer, the cancer stops the pancreas from
• making insulin properly.

Symptoms of PNETs (Pancreatic Neuroendocrine Tumours) may include:

• too much sugar in the blood (hyperglycaemia)
• blurred vision.

Symptoms of pancreatic cancer are also common to other conditions. See your doctor if you experience any of these symptoms.

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