

## DISEASES OF THE PANCREAS

The pancreas is called the “quiet, hidden gland” because it is located deep in the abdomen behind the stomach. The organ contains thin tubes that come together like the veins of a leaf. These tubes join to form a single opening into the intestine.

The pancreas produces juices and special proteins known as enzymes that flow through these tubes into the intestine, where they mix with food. The enzymes digest fat, protein, and carbohydrates so they can be absorbed by the intestine. Pancreatic juices, therefore, play an important role in maintaining good health. The pancreas also produces insulin, which is picked up by the blood flowing through the organ. Insulin is important in regulating the amount of sugar or glucose in the blood.

A number of problems can occur in the pancreas. These include:

- Diabetes mellitus
- Acute pancreatitis
- Chronic pancreatitis
- Pancreatic enzyme deficiency
- Pancreas tumors

## DIABETES MELLITUS

Diabetes is caused by a deficiency of insulin. Insulin is needed to help glucose, which is a major source of energy, enter the body's cells. It is not known why insulin-producing cells in the pancreas die off. When they cease to function, glucose accumulates in the blood and eventually spills into the urine. These patients require daily insulin injections. More importantly, high blood glucose levels, over time, result in significant changes in blood vessels in the eyes, kidneys, heart, legs, and nerves. Damage to these vital organs represents the major risk for patients with diabetes.

## ACUTE PANCREATITIS

This condition occurs when the pancreas becomes quickly and severely inflamed. The major causes are:

- Heavy alcohol ingestion
- Gallstones
- Trauma
- Drugs
- High blood fats (triglycerides)
- Heredity

- Unknown factors

Binge alcohol drinking is a common cause of acute pancreatitis. Gallbladder disease, especially where a gallstone becomes lodged in the main bile duct next to the pancreas, also causes this condition. Accidents, such as the upper abdomen hitting the steering wheel during a car accident, can cause pancreatitis. Certain drugs, such as diuretics, can produce the disorder as can extremely high blood fat levels (triglycerides). Heredity seems to play a role since in some families the condition develops in several members of the family. Finally, there are the occasional cases that occur for unknown reasons. In pancreatitis, the digestive enzymes of the pancreas break out into the tissues of the organ rather than staying within the tubes (ducts). Severe damage to the pancreas then results. Typically, acute pancreatitis presents with severe abdominal pain.

## CHRONIC PANCREATITIS

This condition occurs mostly in alcoholics or people who repeatedly binge drink alcohol. The main symptoms are recurrent, dull, or moderate pain without the severe toxic features of acute pancreatitis. Treatment consists of rest, medication, and certain food restrictions. Alcohol consumption is absolutely prohibited. However, in cases where damage is extensive, chronic pancreatitis and pain can occur even when alcohol consumption has stopped.

Diagnosis of this condition is made by measuring blood enzymes and by performing abdominal imaging tests. Endoscopic procedures are sometimes performed in the evaluation process.

Occasionally a problem develops when the patient becomes dependent on narcotic pain medicines. In some cases, surgery or nerve block is recommended to provide relief of pain.

## PANCREATIC INSUFFICIENCY

Digestive enzymes from the pancreas break down protein, fat, and carbohydrates in food. When there is a deficiency of these enzymes, nutrients are not broken down, resulting in malnutrition and weight loss. This condition is called malabsorption meaning the intestine is unable to absorb these vital nutrients.

Diarrhea (frequently with fat droplets in the stool) and weight loss are two major symptoms. This can result from any cause of pancreatitis, including trauma and infection. Pancreatic enzymes can be taken by mouth to replace those that are no longer made by the pancreas.

## TUMORS OF THE PANCREAS

The pancreas, like most organs, can develop tumors. Some of these are benign and cause no problems. However, some benign tumors can secrete hormones which, when present in high levels, have a damaging effect. For example, insulin can be secreted in excess and result in dangerously low blood sugar levels (hypoglycemia). Another hormone, gastrin, can stimulate the stomach to secrete its strong hydrochloric acid causing recurrent stomach and peptic ulcers, with many complications. Fortunately, there is much that can be done about these tumors.

Cancer of the pancreas is a serious malignancy which is difficult to treat. The disorder occurs in middle- or older-aged people, with the first symptom often being dull pain in the upper abdomen that may radiate into the back. At times, skin jaundice occurs when the bile duct, which carries

yellow bile from the liver and through the pancreas, is blocked. Surgery is the only effective form of treatment for pancreas cancer.

## SUMMARY

Pancreas is a vital organ to the human body. A wide variety of problems can occur in the pancreas. There are effective ways to evaluate and manage disorders of the pancreas when you work with an expert doctor.