

## PANCREATIC CANCER

### INTRODUCTION

More than 42,000 Americans develop cancer of the pancreas each year; it is the fourth leading cause of cancer-related death in the United States.

Two different categories of cancer can affect the pancreas: Exocrine and Endocrine cancers

- *Exocrine pancreatic cancer*

The most common is cancer of the exocrine pancreas that originates in the pancreatic ducts, which carry pancreatic juice to the intestines. This type of pancreatic cancer is called pancreatic adenocarcinoma.

- *Endocrine pancreatic cancer*

Another type of cancer consists of a group of tumors that originate from the cells that make hormones such as insulin. These tumors are called pancreatic neuroendocrine tumors. These tumors are rare and have a different prognosis and treatment.

### PANCREATIC CANCER SYMPTOMS

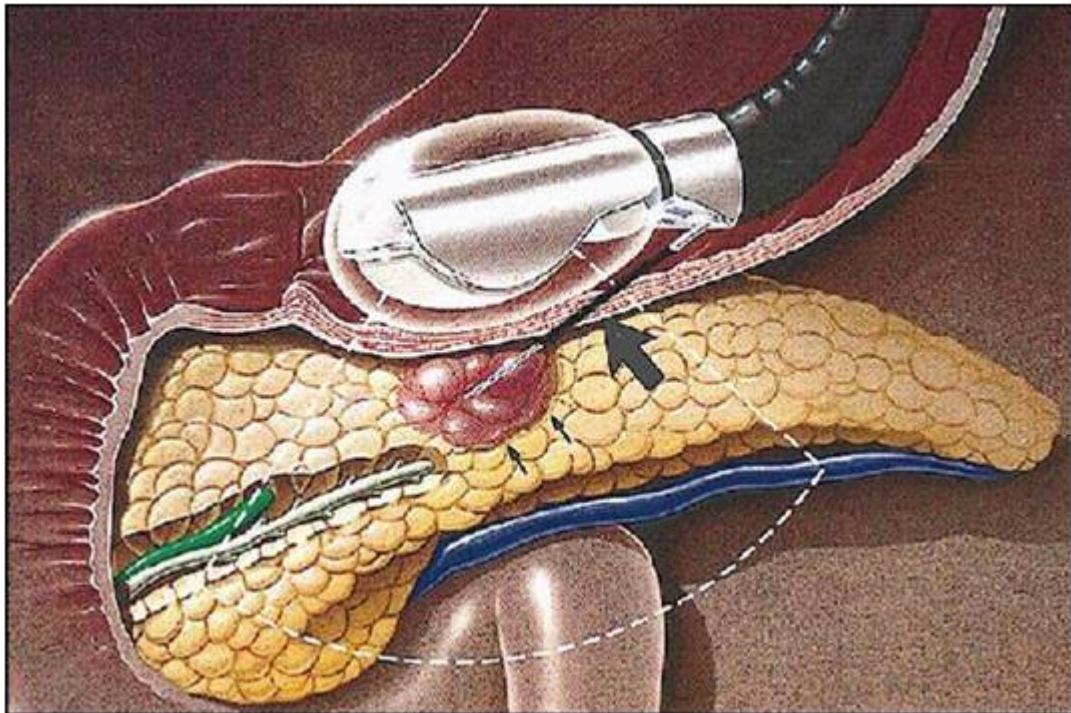
Unfortunately, many people who are diagnosed with pancreatic cancer are found at a late stage. Those who have symptoms may complain of pain, weight loss, or jaundice (yellowing of the skin).

- Pain is common. It usually develops in the upper abdomen as a dull ache that wraps around to the back. The pain can come and go, and it might get worse after eating.
- Weight loss. Some people lose weight because of a lack of appetite, feeling full after eating only a small amount of food, or diarrhea. The bowel movements might look greasy and float in the toilet bowl because they contain undigested fat.
- Jaundice causes yellow colored skin and whites of the eyes. Bowel movements may not be a normal brown color, and instead have a grayish appearance.

### PANCREATIC CANCER DIAGNOSIS

If you develop signs or symptoms that raise suspicion for pancreatic cancer, your doctor or nurse will order a battery of tests. These will include blood tests and imaging tests (usually an ultrasound or CT scan.) These tests can show if there is a mass in the pancreas and if surgery to remove the mass is possible.

In most cases, your doctor will recommend a biopsy to confirm the diagnosis of cancer. This is usually done endoscopically, using a technique called Endoscopic Ultrasound (EUS) with fine needle aspiration (FNA).



#### EUS/FNA OF A PANCREATIC LESION

#### PANCREATIC CANCER STAGING

Once pancreatic cancer is diagnosed, the next step is to determine its stage. Staging is a system used to describe the aggressiveness and spread of a cancer. A pancreatic cancer's stage is based on the size of the cancer, spread to adjacent lymph nodes, vascular invasion and distant spread (metastasis).

Pancreatic cancer stages range from stage I, the earliest stage, to stage IV, which means that the cancer has spread to distant organs, such as the brain. In general, the lower the stage, the better the prognosis of the cancer.

#### PANCREATIC CANCER TREATMENT

Pancreatic cancer can be treated with several approaches. Early stage pancreatic cancer can often be treated and even cured with surgery. After surgery, further treatment, called adjuvant therapy, is often recommended. This might include chemotherapy or radiation therapy. In some cases, chemotherapy or radiation might be offered initially before surgery (neoadjuvant therapy).

#### SUGERY

Unfortunately, surgery is often not possible. Pancreatic cancer is often advanced by the time of diagnosis. If surgery is not possible, radiation therapy, chemotherapy, or both are often used to shrink the cancer, reduce symptoms, and prolong life.

If surgery is an option, the approach depends on the location of the tumor. The standard operation for tumors in the head of the pancreas is a Whipple procedure (also called a pancreaticoduodenectomy). In this procedure, the surgeon removes the pancreatic head, the duodenum (first part of the small intestine), part of the jejunum (the next part of the small intestine), the common bile duct, the gallbladder, and part of the stomach. A modification of the Whipple procedure (a pylorus-preserving Whipple procedure) has been developed that preserves the part of the stomach (the pylorus) that is important for stomach emptying.

Better outcomes are possible in hospitals that perform a large number of Whipple procedures and when the surgeon is experienced with the procedure .

Because tumors in the body or tail of the pancreas do not cause the same symptoms as those in the head of the pancreas, these cancers tend to be discovered at a later stage, when they are more advanced. If the tumor can be removed with surgery, a laparoscopy is usually done first to make sure the cancer has not spread. If surgery is an option, part of the pancreas is removed, usually along with the spleen.

#### ***CHEMOTHERAPY***

Adjuvant (additional) therapy refers to chemotherapy, radiation, or a combination of both that is recommended for people who are thought to be at high risk of having cancer reappear (termed a recurrence or a relapse) after a tumor has been removed surgically. Even if the tumor has been completely removed, tiny cancer cells may remain in the body and grow, causing relapse after surgery. Adjuvant therapy can prolong survival by eliminating the tiny cancer cells before they have a chance to grow.

In people with stage II or III pancreatic cancer, there are two ways to give adjuvant therapy after surgery for pancreatic cancer:

- Chemotherapy alone
- Combination of chemotherapy and radiation therapy, usually followed by several months of chemotherapy alone. This strategy is called chemoradiotherapy.

In the United States, chemoradiotherapy is recommended for most patients. Outside of the United States, patients are frequently offered chemotherapy alone.

Locally advanced pancreatic cancer is cancer that has not yet spread to distant locations in the body, but has spread into areas around the pancreas. The best treatment of locally advanced pancreatic cancer is not clear, but surgery is not usually possible. Options for treatment include chemotherapy alone or chemoradiotherapy.

For patients who are initially diagnosed with metastatic pancreatic cancer (stage IV) chemotherapy might be recommended to slow the spread of the cancer and relieve symptoms.

Chemotherapy does not cure metastatic pancreatic cancer, but it can relieve symptoms, slow disease progression, and prolong life. Talk to your doctor about the benefits and risks of chemotherapy. Your doctor might suggest participating in a clinical trial that compares new chemotherapy medicines or new combinations of treatment.

#### *SYMPTOM CONTROL*

Pancreatic cancer often causes bothersome symptoms like jaundice, blockage of the bowels, pain, and weight loss. Treatments are available to relieve these symptoms.

- Jaundice — Jaundice is caused by a blockage of the flow of bile through the common bile duct into the intestine. The most common treatment is a stent, which is a small tube that is inserted into a duct to keep it open. The stent can usually be placed in a procedure called ERCP (endoscopic retrograde cholangiopancreatography).
- Bowel (duodenal) blockage — About 15 to 20 percent of people with pancreatic cancer will develop a blockage in the upper intestine (duodenum) caused by the tumor. Surgery can be done to create a detour between the stomach and a lower part of the intestine. An alternative to bypass surgery is placement of a stent (a tube) in the duodenum. The stent helps to hold open the blocked area.
- Pain — Pain is a common problem in people with pancreatic cancer. In some people, pain medicine alone is all that is needed. Radiation therapy can also help relieve pain by shrinking the tumor. A procedure called celiac plexus block might also be a good option to control pain. This procedure uses injections of alcohol into nerves that transmit pain signals. The alcohol kills the nerves, preventing them from telling the brain to feel pain.
- Weight loss — Weight loss is common in people with pancreatic cancer. Taking a pancreatic enzyme replacement can help your body to absorb fat. Enzyme replacements are usually taken in a capsule on a daily basis.
- If nausea and vomiting is a problem, there are several medicines that can reduce these symptoms and improve the appetite.

#### *END OF LIFE CARE*

In many people with pancreatic cancer, the disease cannot be cured. Deciding when to stop treating the cancer can be difficult, and the decision should involve the patient, family, friends, and the healthcare team.

Ending cancer treatment does not mean ending care for the patient. Hospice care is frequently recommended when a person is unlikely to live longer than six months. Hospice care involves treatment of all aspects of a patient and family's needs, including the physical (eg, pain relief), psychological, social, and spiritual aspects of suffering. This care may be given at home or in a nursing home or hospice facility, and usually involves multiple care providers, including a physician, registered nurse, nursing aide, a chaplain or religious leader, a social worker, and volunteers.

These providers work together to meet the patient and family's needs and significantly reduce their suffering. For more information about hospice, see [www.hospicenet.org](http://www.hospicenet.org).

#### ***CLINICAL TRIALS***

Progress in treating cancer requires that better treatments be identified through clinical trials, which are conducted all over the world. A clinical trial is a carefully controlled way to study the effectiveness of new treatments or new combinations of known therapies. Ask for more information about clinical trials, or read about clinical trials at:

[www.cancer.gov/clinical\\_trials/learning/](http://www.cancer.gov/clinical_trials/learning/)  
[www.cancer.gov/clinical\\_trials/](http://www.cancer.gov/clinical_trials/)  
<http://clinicaltrials.gov/>