



## **Carcinoids of the Gastrointestinal Tract**

Carcinoid tumors normally develop in the intestinal tract, including the stomach, small bowel, appendix and rectum. In the early stages, carcinoid tumors are treatable and often curable. The risk of metastasis is related to the size of the primary tumor. Carcinoid tumors spread by direct invasion of underlying layers of tissue. They can also spread via lymphatics to regional lymph nodes and through the bloodstream to the liver, lungs, bone or other organs.

Carcinoids are broadly classified as neuroendocrine or APUD (amine precursor uptake and decarboxylation) tumors. Malignant carcinoids may produce at least two hormones, serotonin and substance P.

There are no effective screening methods or known risk factors for this type of cancer.

### **Symptoms**

Symptoms are rare in the early stages and when they do occur, the tumor has probably already spread. The most common symptoms are abdominal pain, intestinal obstruction, and kinking of the bowel.

In addition to the symptoms caused by the tumor, there may be symptoms of the carcinoid syndrome. These symptoms are facial flushing, wheezing, diarrhea, and cardiac valvular disease. It is caused by abnormal amounts of the two hormones produced by malignant carcinoids, serotonin and substance P and other biologically active substances.

### **Diagnosis**

#### *Physical Examination*

- Abdominal mass and enlarged liver.
- Prominent skin veins.
- Signs of carcinoid syndrome.

#### *Blood Test*

- 24-hour elevated levels of a metabolic product of the serotonin produced by the tumor.

#### *Imaging*

- X-rays
- CT or MRI
- Octreoscan - a nuclear medicine test to determine where the tumor has spread.

### **Treatment**

- Surgery
- Radiation Therapy
- Chemotherapy
- Palliation Drugs - used to alleviate symptoms related to the carcinoid syndrome.