

## **Pancreatitis-- Chronic**

*Chronic pancreatitis* is a long-standing inflammation of the pancreas that alters its normal structure and functions. It can present as episodes of acute inflammation in a previously injured pancreas, or as chronic damage with persistent pain or malabsorption.

### *Symptoms*

Patients with chronic pancreatitis usually present with persistent abdominal pain or steatorrhea resulting from malabsorption of the fats in food (typically very bad-smelling and equally hard on the patient), as well as severe nausea.

Diabetes is a common complication due to the chronic pancreatic damage and may require treatment with insulin. Some patients with chronic pancreatitis look very sick, while others do not appear to be unhealthy at all.

Considerable weight loss, due to malabsorption, is evident in a high percentage of patients, and can continue to be a health problem as the condition progresses. The patient may also complain about pain related to their food intake, especially those meals containing a high percentage of fats and protein.

### *Causes*

At least 70% of adult cases are caused by chronic alcohol use, and most patients have consumed more than 150 g/day of alcohol over six to twelve years.

Gallstone-associated pancreatitis is predominantly acute or relapsing-acute in nature, and some cases of chronic pancreatitis are of undetermined or idiopathic origin.

A few are inherited or secondary to Sphincter of Oddi dysfunction (SOD). Other less frequent causes include chronic steroid and or anti-inflammatory use.

In up to one quarter of cases, no cause can be found. Autoimmune pancreatitis is increasingly recognised and may be associated with raised IgG4 levels, other autoimmune features and bile duct involvement.

Cystic fibrosis is the most common cause of chronic pancreatitis in children. In other parts of the world, severe protein-energy malnutrition is a common cause.

### *Diagnosis*

The diagnosis of chronic pancreatitis is typically based on tests on pancreatic structure and function, as direct biopsy of the pancreas is considered excessively risky. Serum amylase and lipase may well not be elevated in cases of advanced chronic pancreatitis, but are often used as markers for detecting pancreatic inflammation in acute pancreatitis. A secretin stimulation test is considered the gold standard functional test for diagnosis of chronic pancreatitis but not often used clinically.

The observation that bi-carbonate production is impaired early in chronic pancreatitis has led to the rationale of use of this test in early stages of disease (sensitivity of 95%).

Other common tests used to determine chronic pancreatitis are faecal elastase measurement in stool, serum trypsinogen, Computed tomography (CT) scans, ultrasounds, EUS, MRI, ERCP and MRCP. Pancreatic calcification can often be seen on plain abdominal X-rays, as well as CT scans.

There are other non-specific laboratory studies useful in diagnosis of chronic pancreatitis. Serum bilirubin and alkaline phosphatase can be

elevated, indicating stricturing of the common bile duct due to edema, fibrosis or cancer.

When the chronic pancreatitis is due to an autoimmune process, elevations in ESR, IgG4, rheumatoid factor, ANA and anti-smooth muscle antibody may be seen.

The common symptom of chronic pancreatitis, steatorrhea, can be diagnosed by two different studies: Sudden staining of feces or fecal fat excretion over 24hr on a 100g fat diet. To check for pancreatic exocrine dysfunction, the most sensitive and specific test is the measurement of fecal elastase, which can be done with a single stool sample, and a value of less than 200 ug/g indicates pancreatic insufficiency.

### *Treatment*

The different treatment modalities for management of chronic pancreatitis are medical measures, therapeutic endoscopy and surgery. Treatment is directed, when possible, to the underlying cause, and to relief of the pain and malabsorption. Diabetes may occur and need long term insulin therapy. (Type 1 diabetes)

The abdominal pain can be very severe and require high doses of analgesics. Disability and mood problems are common, although early diagnosis and support can make these problems manageable.

### *Pancreatic Enzyme Supplementation*

Replacement pancreatic enzymes are often effective in treating the malabsorption and steatorrhea. However, the outcome from 6 randomized trials has been inconclusive regarding pain reduction.

While the outcome of trials regarding pain reduction with pancreatic enzyme replacement is inconclusive, some patients do have pain reduction with enzyme replacement and since they are relatively safe, giving enzyme replacement to a chronic pancreatitis patient is an

acceptable step in treatment for most patients. Treatment may be more likely to be successful in those without involvement of large ducts and those with idiopathic pancreatitis. Patients with alcoholic pancreatitis may be less likely to respond.

### *Surgery*

Traditional Surgery for Chronic Pancreatitis tends to be divided into two areas - resectional and drainage procedures. New and proven transplantation options prevent the patient from becoming diabetic following the surgical removal (resection) of their pancreas. This is achieved by transplanting back in the patients own insulin-producing beta cells.