

PANCREATITIS

By: Wendy L. Taylor, D.N.P., C.P.N.P.

Pancreatitis is usually a self-limited, acute, inflammatory process of the pancreas. In the majority of cases, it is mild and only requires fluid resuscitation and pancreatic rest and resolves in 5-10 days. In severe cases, complications such as pancreatic necrosis, abscess formation, or pseudo cysts and other severe, even life-threatening complications can develop. The presenting symptoms of pancreatitis include abdominal pain, usually in the periumbilical region, that can be severe. Often the patient has severe nausea and vomiting as well.

Acute pancreatitis occurs when an

event triggers a pancreatic injury. Digestive enzymes are activated and cell injury produces a local inflammatory response with the release of inflammatory mediators. This can occur secondary to a systemic illness, biliary disease such as cholelithiasis, choledochal cyst, or biliary sludge or stone, trauma, medications such as seizure medications or azathioprine, mercaptopurine, mesalamines, or metronidazole to name some of the most common, anatomic anomaly, obstruction, infection, metabolic causes or toxins.

Chronic pancreatitis occurs when patients have a condition that predisposes them to recurrent inflammation of the pancreas. There are 3 genetic causes to chronic pancreatitis. Hereditary pancreatitis (PRSS1) is the most common genetic cause of chronic pancreatitis and is associated with mutation in the cationic trypsinogen gene. A mutation to

this gene causes premature activation of the trypsinogen resulting in pancreatic inflammation and pancreatitis. Cystic fibrosis transmembrane conductance regulator gene (CFTR) is a heterozygous mutation of this autosomal recessive gene found in 20-40% of the patients with chronic pancreatitis.

Chronic pancreatitis can also be related to an obstructive process. Pancreatic divisum, idiopathic fibrosing pancreatitis, abdominal trauma resulting in ductal damage and stricture formation, or congenital anomalies such as choledochal cyst or pancreatic ductal duplication or autoimmune pancreatitis.

Diagnosis of pancreatitis is made based on clinical presentation, elevation of Amylase and lipase, and radiographic evidence of pancreatitis such as pancreatic edema or enlargement seen on ultrasound or CT scan of the abdomen. Lipase is a more sensitive indicator of pancreatic injury than amylase. There may or may not be associated elevations of transaminases and GGT. MRCP (magnetic resonance cholangiopancreatography) is helpful in patients with recurrent pancreatitis and can diagnose anatomical abnormalities or obstructive processes. Endoscopic Retrograde cholangiopancreatography-ERCP is less common in acute pancreatitis but has proven to be helpful for intervention in patient's whose pancreatitis is secondary to an obstructive process or when intervention with pancreatic stent is indicated.

Treatment of acute and chronic pancreatitis is largely reliant on flu-

id resuscitation and pancreatic rest (Nothing by mouth). Pain control will be essential for the patient. Nutrition can be supplemented while pancreatic rest is occurring with TPN-Total parental nutrition or enteral feedings that occur transpyloric via a nasojejunal feeding tube as early as patient can tolerate to prevent intestinal mucosal atrophy and decrease complications.

Complications of pancreatitis include pseudocyst formation, pancreatic necrosis, or abscess formation.

There are some emerging treatments for patients with chronic pancreatitis who develop both pancreatic exocrine and endocrine insufficiency. This is total pancreatectomy with or without islet cell transplantation. Total pancreatectomy involves removal of the pancreas and reconstruction of the GI tract. This procedure last 8-10 hours and is quite extensive. Without a pancreas, the patient develops insulin dependent diabetes. The role of islet cells in the pancreas is insulin and other hormone production which regulates blood glucose levels. After removal of the pancreas, islet cells will be isolated from the diseased organ in a lab and returned to the OR and injected into the patient's liver. The goal is for the transplanted cells to begin to produce insulin in the liver and lessen or even eliminate the need for insulin supplementation.

At GI for Kids, we offer a team approach for the care of our patients. We have Physicians, Mid-Level providers, such as Nurse practitioners and Physician Assistants, Registered dietitians, a clinical psychologist and a Licensed clinical social worker to ensure that our patients receive quality holistic care.

NUTRITION IN PANCREATITIS

Pancreatitis occurs when the pancreas becomes inflamed. The pancreas is responsible for releasing digestive enzymes into the small intestine to aid in food digestion, as well as releasing insulin and glucagon into the bloodstream to help control how the body uses food for energy. In children, most cases are acute and isolated or recurrent acute attacks. Acute pancreatitis is sudden inflammation that lasts for a short period of time, and with the right treatment can resolve completely. Chronic pancreatitis is a long-lasting inflammation of the pancreas and most often occurs after an episode of acute pancreatitis. Chronic pancreatitis is more commonly seen in adults; however children that have recurrent acute pancreatitis are at risk for developing chronic pancreatitis.

Nutrition intervention in treatment of pancreatitis is important, but varies depending on the severity of inflammation. Due to the fact that the pancreas releases digestive enzymes to help digest food, it is stimulated anytime we eat. The first method of treatment is pancreatic rest, which requires that the patient not take anything by mouth. During this period of pancreatic rest, IV fluids for hydration are initiated and supplemental nutrition is often provided by total parenteral nutrition (TPN) or transpyloric enteral nutrition given via nasojejunal (NJ) feedings. Once acute pancreatitis resolves, the patient is able to slowly transition back to a well balanced diet. They may be started out on a clear liquid diet; however this is not nutritionally

complete and should be advanced as soon as additional food is tolerated. With reintroduction of an oral diet occurs, it is easier on the pancreas to start with 5-6 small meals throughout the day, avoiding foods with a high fat content, heavily spiced foods, and foods that contain a significant amount of sugar.

In chronic pancreatitis, long term dietary changes may be warranted. Symptoms of chronic pancreatitis often include abdominal pain, frequent nausea and vomiting, malabsorption of nutrients, and development of diabetes. In cases of abdominal pain, nausea and vomiting, it is important to consume a low fat, bland diet until symptoms subside. As mentioned before, the pancreas secretes enzymes that important in the break down and absorption of nutrients. In chronic pancreatitis, patients often lack these enzymes and have malabsorption of fat. Depending on the level of malabsorption, pancreatic enzyme and fat soluble vitamin supplementation may be necessary in addition to a low fat diet. Because the pancreas is also in charge of producing insulin, patients with chronic pancreatic insufficiency may develop diabetes. In cases where diabetes occurs, insulin injections may be necessary in conjunction with proper nutrition. Nutritional management of diabetes includes avoiding high sugar foods and carbohydrate counting. In order to achieve proper nutrition in chronic pancreatitis, it would be best to work with your doctor and consult a Registered Dietitian Nutritionist (RDN).

Celi-Act



Celiac Disease Support Group

East-TN Chapter #120, Celiac Support Association

For more info visit : celi-act.com



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GI for Kids, PLLC

Summer 2016

www.giforkids.com

Friends and Colleagues,

Happy Summer! With this new season, we are excited to welcome Dr. Chad Thornhill to our GI for Kids practice as of July 18th. Dr. Thornhill is a native Georgian who has been completing his training in Pediatric GI at University of Texas Health Science Center in Houston, Texas. We are thrilled that he has chosen to join us at GI for Kids.

Our focus for this issue is pancreatitis. We have seen an increase in patients with pancreatitis in our practice and are seeing a more complicated course for these patients as well. We will discuss acute and chronic pancreatitis and the management of both in this issue. We hope that you find this information helpful in the care of your patients. Please do not hesitate to contact us with any questions or to refer a patient.

Please visit our website, www.giforkids.com for more information on our practice, providers, and the diseases we manage. As always, we are proud to partner with you to care for the children and teens of East Tennessee and the surrounding area.

Youhanna S. Al-Tawil, MD
Medical Director



Meet our New Provider

Dr. Chad Thornhill MD

I am blessed to love what I do, and being a doctor is the only job I ever really considered. Gastroenterology is a fascinating field, covering a wide variety of topics: nutrition and obesity, the various forms of food allergies, inflammatory bowel disease, and the delicate balance between the mind and the GI tract. My career as a Pediatric Gastroenterologist allows me focus on the medicine about which I am passionate, diagnose and treat children, and perform procedures that greatly improve quality of life for my patients and their families. My education began at UGA where I majored in Psychology and minored in Biology, while playing for the varsity baseball team. I went on to medical school at the Medical College of Georgia and Pediatric Residency at Emory University. I completed my Pediatric GI fellowship at the University of Texas Health Science Center at Houston, where I focused my research on making colonoscopies more tolerable for children. I count myself equally blessed to be married to my wife, Rebecca (a lawyer and fellow UGA graduate), and we have two beautiful children, Charlie and Caroline. After more than a decade together - and having lived in four different cities - we are thrilled to be putting down roots in Knoxville. We love SEC football, cooking and entertaining, and traveling whenever possible.

