

INFORMATION

Gastroparesis

A Common Gastrointestinal Condition

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GASTROPARESIS

A Common Gastrointestinal Condition

Gastroparesis is a common condition of the gastrointestinal tract that recent studies claim affects approximately 4% of the United States population¹ many of them undiagnosed due to the lack of awareness in the Medical community and general population.

What is Gastroparesis?

Gastroparesis was initially used in 1958 by Dr. P Kassander to describe a condition called “gastroparesis dibeticorum”² primarily applied to diabetics. The term has since been expanded to encompass a disorder of the stomach characterized by delayed gastric emptying without evidence of any physical obstruction.

The name comes from the Latin roots “gastro” which means stomach and “paresis” relating to paralysis since often the Vagus Nerve is involved in the entomology and it is believed that many cases of Gastroparesis are in fact nerve damage to the Vagus Nerve which controls many of the autonomic functions of the heart and gastrointestinal tract.³

Gastroparesis is when the muscles of the stomach do not work properly, meaning that they do not contract to ‘grind’ food or push the food into the small intestine for digestion and absorption leading to delayed gastric emptying. This can be mild with few symptoms and no impact on quality of life and daily activities to extreme with repeated ER visits and hospitalizations for nausea, dehydration and pain causing a significant impact on quality of life and daily activities as well as a financial burden.

¹ William L. Hasler, M. (2008, January 23). *Gastroparesis -- Current Concepts and Considerations*. Retrieved January 25, 2010, from Medscape.com: <http://www.medscape.com/viewarticle/563730>

² Stephen P. James, M. D. (2004, April 2). *Digestive Diseases Interagency Coordinating Committee = Gastroparsis- A Common Disorder*. Retrieved January 25, 2010, from PDF of Meeting Minutes: http://www2.niddk.nih.gov/NR/rdonlyres/C20F649A-CE54-46C5-A574-0CBA70650682/0/DDICC_April_02_2004_Minutes.pdf

³ Staff, M. C. (2009, November 21). *Gastroparesis- Causes*. Retrieved January 25, 2010, from Mayoclinic.com: <http://mayoclinic.com/health/gastroparesis/DS00612/DSECTION=causes>

What Causes Gastroparesis?

While the most common cause of Gastroparesis is Diabetes in relation to the typical neuropathies that are a complication of Diabetes, it can also be caused by smooth muscle disorders such as Muscular Dystrophy, Auto-Immune disorders such as Hashimoto's Thyroiditis, neurological disorders such as Multiple Sclerosis, connective tissue disorders such as Scleroderma, Autonomic Nerve disorders such as POTS, narcotic pain relievers such as Morphine, a result of nerve damage caused by an abdominal surgery or scar tissue, a result of cancer treatment such as Chemotherapy, Myopathies such as Shy Dagger Syndrome or may be Idiopathic meaning that no known cause is known.

What are common symptoms?

Common symptoms of Gastroparesis are:

- Early satiety (feeling full after just a few bites of food)
- Nausea
- Bloating
- Constipation
- Diarrhea
- Vomiting
- Lack of appetite
- Malnutrition or vitamin/mineral deficiency
- Weight loss (not intentional)
- Heartburn or GERD

Less Common but not rare symptoms are:

- Weight gain (not intentional)
- PICA or cravings for non food items such as starch, chalk or clay

How does one test for Gastroparesis?

There are a variety of tests being used to diagnose Gastroparesis with the 'Gold Standard' being the GES or Gastric Emptying Study.

In this test the patient fasts for 12 to 18 hours and avoids caffeine or cigarettes for 24 hours prior to testing then are given a small bland meal in the testing facility consisting of scrambled eggs or oatmeal if there is an egg allergy with a small amount of radioactive isotope

added. Depending on the facility the patient will then either lay on a table for 90 minutes while a scan is taken to measure how fast the meal leaves the stomach or are asked to sit in front of a scanner and a picture taken then repeated every hour for four hours. The results are read and a report sent to the Doctor that explains how long it takes for the stomach contents to empty.

This is a non-invasive test, meaning that no needles or scopes are used.

The radioactive isotope has a very short half-life and usually leaves the body in 24 hours and is completely harmless.

Some Doctors prefer to have other testing done to rule out any physical or physiological reasons for the symptoms first such as an EDG or upper endoscopy to check for physical obstructions or ulcers and a barium study with ultrasound or CT scan prior to doing an GES, but those tests cannot be used to diagnose Gastroparesis and can only be used to rule out other conditions.

What can be done to treat Gastroparesis?

There are a few medications on the market that are used to treat Gastroparesis such as:

- **Metoclopramide (generic-Reglan)-** This drug stimulates stomach muscle contractions to help emptying. Metoclopramide also helps reduce nausea and vomiting. Metoclopramide is taken 20 to 30 minutes before meals and at bedtime. Side effects of this drug include fatigue, sleepiness, depression, anxiety, and problems with physical movement.
- **Erythromycin-** This antibiotic also improves stomach emptying. It works by increasing the contractions that move food through the stomach. Side effects include nausea, vomiting, and abdominal cramps.
- **Domperidone-** This drug works like metoclopramide to improve stomach emptying and decrease nausea and vomiting. The FDA is reviewing domperidone, which has been used elsewhere in the world to treat Gastroparesis. Use of the drug is restricted in the United States.

There are also more invasive treatments such as:

- **Botox Injections-** The use of botulinum toxin has been associated with improvement in symptoms of Gastroparesis in some patients; however, further research on this form of therapy is needed. It is theorized that the botulinum injections only work for patients who's Gastroparesis is caused by increased pyloric tension at which times injections to the pyloric juncture may give relief.
- **Gastric Pacemaker-** An implantable device made by MedTronics that helps to control the nausea and vomiting associated with Gastroparesis using mild electric stimulation. This is a specialized application that is only offered in a few major Tertiary Hospitals in the United States.

Nutrition for those with Gastroparesis

Proper nutrition can be very difficult for people with Gastroparesis since many of the foods that are needed for a full and balanced diet are often not tolerated and the patient often has avoidance issues when it comes to food because eating in itself leads to pain and or discomfort.

Patients with Gastroparesis need to avoid the following:

- **Fiber-** fiber can be hard to digest and if the stomach is not contracting properly. Foods high in fiber need to be avoided including- raw fruits and vegetables, the peels and skins from most fruits and vegetables, pulp from citrus juices, whole grains, beans and legumes to name a few.
- **Fat-** fats are often not tolerated and can lead some Doctors to suspect gall bladder issues since the symptoms can be similar. For this reason meats need to be low fat (ground is best) such as buffalo, venison or goat. While the patient needs to avoid fats, some fats are good and do not adversely affect digestion such as Omega 3 fatty acids found in salmon and tuna and the fats found in avocados.

Patients will need to modify how they eat by having 6-8 small meals a day as opposed to the normal three meals a day with those meals focusing on soft foods to aid digestion. The general rule of thumb is that foods should be able to be cut with a spoon.

Supplemental liquid meals (such as Boost® or Ensure®) should be encouraged to help with caloric intake and to insure proper nutrition.

If the patient is unable to keep down any nutrition orally then the following may be considered:

- **Feeding tube-** The tube, called a jejunostomy (aka j-tube), is inserted through the skin on your abdomen into the small intestine. The feeding tube bypasses the stomach and places nutrients and medication directly into the small intestine. These products are then digested and delivered to your bloodstream quickly. You will receive special liquid food to use with the tube. The jejunostomy is used only when Gastroparesis is severe or the tube is necessary to stabilize blood glucose levels in people with diabetes since there can be serious complications due to infection and slippage of the tube.
- **Parenteral nutrition-** refers to delivering nutrients directly into the bloodstream, bypassing the digestive system. The doctor places a thin tube called a catheter in a chest vein, leaving an opening to it outside the skin. For feeding, you attach a bag containing liquid nutrients or medication to the

catheter. The fluid enters your bloodstream through the vein. Your doctor will tell you what type of liquid nutrition to use. This approach is an alternative to the jejunostomy tube and is usually a temporary method to get you through a difficult period with Gastroparesis. Parenteral nutrition is used only when Gastroparesis is severe and is not helped by other methods due to the risk of placement site infection.

Complications of Gastroparesis

Due to the complex nature of Gastroparesis there are some complications that need to be kept in mind.

Intestinal Pseudo-Obstruction- Intestinal pseudo-obstruction is caused by nerve or muscle problems that prevent the intestines from contracting normally to move food, fluid, and air through the intestines. Symptoms mimic a true bowel obstruction such as severe abdominal pain, constipation, lack of or diminished abdominal sounds and tenderness upon palpitation. The patient may also present with a fever (due to inflammation and possible infection) and diarrhea. Treatment may include medications, such as antibiotics to treat bacterial infections, pain medication, and medication to treat intestinal muscle problems. People with ACPO may need procedures to remove gas from the bowel. In severe cases of intestinal pseudo-obstruction, surgery to remove part of the intestine or other intestinal surgery might be necessary.

Bezoars- collections of undigested material that collects in the stomach or intestines and can be a complication of Gastroparesis because of motility problems in the stomach or small intestine.

- Food Boli imitate true bezoars and are composed of loose aggregates of food items such as seeds, fruit pith, or pits as well as other types of items such as shellac, bubble gum, soil, and concretions of some medications.
- Pharmacobezoars (or medication bezoars) are mostly tablets or semi-liquid masses of drugs that do not pass and instead collect in the stomach or intestine.
- Phytobezoars are composed of indigestible plant material and are frequently reported in patients with impaired digestion and decreased gastric motility.

Bezoars in humans cause the feeling of fullness, pain, nausea, and vomiting. Stomach bezoars are diagnosed by a doctor during an EGD (upper-endoscopy exam) at which time smaller ones can be removed but larger ones usually require surgery to remove. When in the intestine they are found using x-ray, barium studies, CAT Scan or MRI and are then surgically removed.

Malnutrition- caused by the restricted diet and or inability to keep down meals. One common complication is Iron Deficient Anemia, but other issues may be low body fat, low B-12, low calcium, low Vitamin D and other mineral and vitamin deficiencies.

Points to Remember

- Gastroparesis is a common condition that is under-diagnosed in the United States, diagnosis often taking years or even decades due to the lack of awareness.
- Gastroparesis has many causes.
- Gastroparesis is incurable at this time.
- Patients need to be given more information at the time of diagnosis about treatment options as well as information about what foods to avoid to better control their symptoms.
- The GES (Gastric Emptying Study) is the gold standard in diagnosing Gastroparesis.
- Awareness needs to be raised in the Healthcare Community as well as the general public.
- Current Estimates are that 1 out of every 15 people in the United States are affected by Gastroparesis.