

Gastroparesis, dyspepsia and delayed stomach emptying – CHEAT SHEET (draft)

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Gastroparesis is a relatively common digestive disorder, affecting up to four percent of people in the United States. Symptoms can range from mild to severe and be temporary or chronic. Several treatments are available, although dietary changes are usually the first option recommended to those with gastroparesis.¹

Gastroparesis is a medical condition that causes a delay in the emptying of the stomach. It occurs because the normal movement of the stomach muscles, which serves to push food through the digestive tract, does not work correctly or slows down.¹

Symptoms of gastroparesis include:¹

- bloating
- nausea
- stomach pain
- vomiting
- heartburn

Gastroparesis can be mild and produce few symptoms, or it can be severe and cause disability and frequent hospitalizations. Complications of gastroparesis include malnutrition, dehydration, and irregular blood sugar levels. The cause is not apparent in most instances of gastroparesis. However, some cases can be linked to other medical conditions, including diabetes or lupus, or certain medical procedures, such as bariatric surgery. Women are more likely than men to have gastroparesis.¹

Functional dyspepsia (FD) is a chronic disorder of sensation and movement (peristalsis) in the upper digestive tract. Peristalsis is the normal downward pumping and squeezing of the oesophagus, stomach, and small intestine, which begins after swallowing. We call this disorder functional because there are no observable or measurable structural abnormalities found to explain persistent symptoms.¹

The cause of functional dyspepsia is unknown; however, several hypotheses could explain this condition even though none can be consistently associated with FD. Excessive acid secretion, inflammation of the stomach or duodenum, food allergies, lifestyle and diet influences, psychological factors, medication side effects (from drugs such as non-steroidal anti-inflammatory drugs and aspirin), and *Helicobacter pylori* infection have all had their proponents.¹

Symptoms of Functional Dyspepsia:¹

The disturbed motility present in functional dyspepsia leads to amplified sensation in the upper gut (visceral hyperalgesia). This is due to uncoordinated and even ineffectual emptying of the upper digestive tract, with resulting symptoms of pain, fullness and bloating, and an inability to finish meals. Other common symptoms of FD include heartburn, a sour taste in the mouth, excessive burping, nausea, and sometimes vomiting. Characteristically, these complaints are sporadic, poorly localized, and without consistent aggravating or relieving factors. The vast majority of patients experience more than one

symptom. Functional dyspepsia may come and go and symptoms could present with increased severity for several weeks or months and then decrease or disappear entirely for some time.

Diagnosis:³

Assessment of gastric emptying is commonly performed for the evaluation of nausea, vomiting and dyspepsia to assess for delayed gastric emptying. Limitations of this approach include the imperfect correlation of symptoms to rates of stomach emptying, and the relative lack of satisfactory treatments for abnormal gastric emptying. Nevertheless, emptying of triturated content is arguably the most important function of the stomach, and abnormalities associated in either accelerated or delayed emptying may be a marker for the underlying defect in the neuromuscular apparatus of the stomach that gives rise to symptoms. Of the imaging techniques, scintigraphy is widely available and the standard method for assessing gastric emptying in clinical practice. However, scintigraphy remains expensive and is associated with some radiation exposure. Wireless motility capsule and gastric emptying breath testing are newer non-invasive technologies that allow standardization among centres and these tests can be performed in a gastroenterology practice. Other techniques, such as ultrasound, single-photon emission computed tomography (SPECT) and magnetic resonance imaging (MRI) are predominantly research tools for evaluating gastric volumes, contractility, gastric distribution of meals, and emptying.

Medications²

Drug treatments for gastroparesis include:

Medications to enhance stomach emptying. These include metoclopramide, erythromycin, and domperidone. However, there is a risk of negative side effects with these medications, and erythromycin may also become less effective with time. A new drug, relamorelin, is currently being developed and may have fewer side effects than medications currently on the market.

Medications to reduce nausea and vomiting. These include prochlorperazine, diphenhydramine, and ondansetron.

Medications to avoid

Several medications are known to delay stomach emptying. People who are experiencing gastroparesis should tell their doctor about all the medications they are taking.

Medications that delay stomach emptying include:

- antacids, containing aluminium
- anticholinergic agents
- narcotics

Medical procedures¹

In severe cases, people who are unable to take any food or liquids due to gastroparesis may require a feeding tube. Alternatively, a gastric venting tube may be used to relieve pressure in the stomach.

A procedure called gastric electrical stimulation (GES) has shown mixed results in the treatment of gastroparesis. People with diabetic gastroparesis, in particular, may experience benefits from it. GES involves surgically implanting a device to stimulate the stomach muscles.

Diagnosing Functional Dyspepsia²

In the past, some physicians would have diagnosed peptic ulcer disease in a patient complaining of upper middle abdominal (epigastric) pain and nausea. Now, using such investigative tools as detailed barium X-rays or gastroscopy, physicians can quickly rule out an ulcer diagnosis. In fact, twice as many tested will not have an ulcer as will have one in this grouping of dyspeptic people.

Functional dyspepsia (FD), a syndrome thought to originate from the gastroduodenal region, is one of the most prevalent “functional” GI disorders. When symptoms are present in the absence of underlying organic disease that is likely to explain the symptoms, determined by a negative upper GI endoscopy, the patient is considered to have FD. The epidemiology of uninvestigated dyspepsia has mainly been studied using the Rome II criteria. The prevalence rate is estimated to range between 5 and 12% when strict criteria are used, but liberal criteria may yield prevalence’s as high as 40%.³

A physician forms a diagnosis of functional dyspepsia when there is no evidence of structural disease and there have been at least three months of one or more of the following (with onset at least six months earlier):²

- bothersome post-meal (postprandial) fullness
- early satiation
- epigastric pain
- epigastric burning

The role of investigations and testing in functional dyspepsia is often misunderstood. Current technology cannot confirm dysmotility and there is no definitive diagnostic test for FD. All conventional testing produces normal results; however, a normal result on X-ray or gastroscopy does not mean there is nothing wrong with the patient. This testing shortfall can lead to anger or frustration for the patient, who continues to experience very real symptoms.

Medications²

There are two main approaches to treating functional dyspepsia with medications: neutralizing acid and blocking its production. For neutralizing acid, over-the-counter medications such as Maalox[®], Tums[®], and Pepto-Bismol[®] may subdue symptoms. Another product, Gaviscon[®], neutralizes stomach acid and forms a barrier to block acid rising into the esophagus. Some find that these non-prescription antacids provide quick, temporary, or partial relief but they do not prevent heartburn. Consult your physician if you are using antacids for more than three weeks.

Gastroparesis vs Functional dyspepsia³

Despite the relatively high prevalence of gastroparesis and functional dyspepsia, the aetiology and pathophysiology of these disorders remain incompletely understood. Similarly, the diagnostic and treatment options for these two disorders are relatively limited despite recent advances in our understanding of both disorders.

While gastroparesis and functional dyspepsia are generally considered two distinct disorders, the distinction between them is blurred by the considerable overlap in symptoms and the recognition that delayed gastric emptying can be seen in functional dyspepsia.

Diet tips¹

1. Eating smaller meals

Increasing the number of daily meals and decreasing the size of each one can help alleviate bloating. The stomach may also be able to empty more quickly.

Eating smaller amounts of food at each meal means the number of meals should be 4 to 6 per day to meet nutritional needs.

2. Chewing food properly

If food is not chewed enough in the mouth, it requires more effort to be broken down in the stomach. Food that is not properly broken down in the stomach will not empty easily into the small intestine. If necessary, a person should address any dental problems they have that may be preventing the thorough chewing of their food.

3. Avoiding lying down during and after meals

Lying down while eating, or within 3 hours of a meal, can delay stomach emptying. This is because the helpful effects of gravity are reduced. Lying down, during or following meals, also contributes to acid reflux. Going for a walk after eating, or engaging in another gentle physical activity, may help to stimulate the stomach muscles.

4. Drinking liquids between meals

As fluids take up space in the stomach, it may be beneficial to drink liquids between meals, rather than during them.

6. Avoiding certain foods

Certain foods are more difficult to digest and can make the symptoms of gastroparesis worse. They include:

- **Fatty foods.** Fats delay emptying of the stomach. However, some fats are still important for health. Liquids containing fats, such as smoothies and shakes, may be easier to digest than solids. Limiting high-fat meats and dairy products that can worsen symptoms is also helpful.
- **fibre-filled foods.** Fibre increases the time it takes for the stomach to empty and can contribute to blockages, also known as bezoars, in the stomach. High fibre foods to avoid include:
 - fruits such as apples, berries, figs, and oranges

- vegetables such as broccoli, cauliflower, cabbage, and green beans
 - whole grain cereals
 - nuts and seeds
 - beans and lentils
- **Foods that cannot be chewed easily.** If foods are not easy to chew, they will not be sufficiently broken down by the time they reach the stomach. Examples include nuts, seeds, corn, and popcorn.
 - **Junk foods.** Because the stomach empties slowly in people with gastroparesis, it is important to consume mainly healthy and nutritious foods. These types of foods help to reduce the risk of becoming full on foods such as pizzas, chips, fries, sodas, and sweets, which do not provide adequate nutrition.
 - **Alcohol.** The rate of gastric emptying is delayed following alcohol consumption.

Chinese Herbal Medicine

Delayed emptying of the stomach sack was called “pi zheng” 痞证. Clinically speaking the best treatment protocol is the use of 1-7 days of the ban xia xie xin tang 半夏泻心汤 followed by 1 to 2 weeks of liu jun zi tang 六君子汤. This methods generally covers 90-95% of all cases and rarely has side effects. On rare occasions the “pi zheng” may require other formulas such as:

- Ling gui shu gan tang 苓桂术甘汤 – the tongue would be very large, flaccid and extremely watery, the patient normally also has excessive phlegm production.
- Li Zhong tang 理中汤 – tongue is pale with a thick white, greasy type coat, the patient normally has watery stools.
- Wen dan tang 温胆汤 – the tongue is similar to ban xia xie xin tang 半夏泻心汤 in that it has a red tip with pallor, but in this case there is very obvious incomplete emptying of bowel motions.
- Liu jun zi tang 六君子汤 – the tongue is pale with teeth marks.
- Yi wei tang -益胃汤 – this is the rarest form and the patient will nearly always have a geographic tongue coating.

Acupuncture⁴

One article said that, “researchers find acupuncture more effective than the drug mosapride for the treatment of abdominal pain and discomfort due to indigestion. This is significant in that mosapride has been proven effective for the relief of digestion related disorders, including GERD (gastroesophageal reflux disease), gastritis, and functional dyspepsia. Specifically, acupuncture outperformed mosapride for the treatment of functional dyspepsia (abdominal discomfort or pain with no known organic cause identifiable with endoscopy). The results were confirmed by electrogastrogram and other instruments. The

combination of Gongsun (SP4) and Neiguan (PC6) produced significant improvements for patients with functional dyspepsia without producing adverse effects. The data was published in the report entitled *Observations on the Efficacy of Electroacupuncture at Points Gongsun and Neiguan in Treating Functional Dyspepsia*.

The combination of Gongsun and Neiguan, “significantly relieved clinical symptoms such as abdominal distention and discomfort after eating, early satiety, upper abdominal pain, and upper abdominal burning sensation.” The researchers note that “acupuncture outperformed drugs in regulating EGG dominant frequency as well as slow wave frequency.” They add, “compared with the drug group, the acupuncture group showed a significant difference in FDDQL scores.”

References

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