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"From The Pharmacist" – Serve You's Educational Series on Disease States

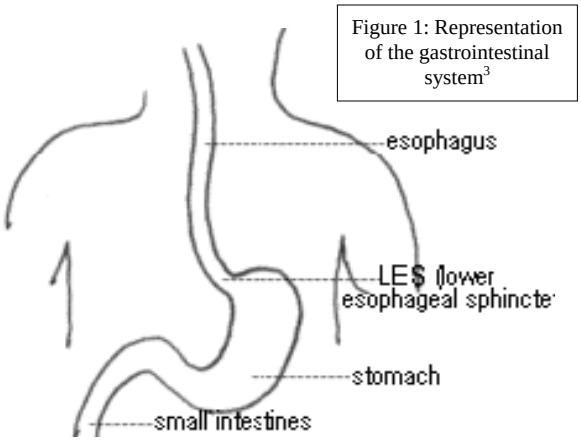
Scott Draeger, PharmD, Manager of Clinical Services

GERD: What You Need To Know

What is GERD?

Gastroesophageal reflux disease (GERD) is defined as a collection of symptoms that occur when stomach acid and other irritating substances move from the stomach into the esophagus.[1,2] In most cases of GERD, the stomach contents are able to reach the esophagus because of a weak or malfunctioning lower esophageal sphincter (LES). When working properly, the LES functions under a high pressure environment where it relaxes to allow food to enter the stomach and tightens to prevent stomach contents from leaving the stomach **(Figure 1).**

Figure 1: Representation of the gastrointestinal system[3]



In the case of GERD, the LES is unable to maintain enough pressure to remain tightly closed, allowing stomach acid to enter the esophagus and cause irritation.

What causes GERD?

There are a number of underlying factors that can potentially reduce LES pressure, causing GERD. Some of the most common causes of GERD are hiatal hernia, certain foods **(Table 1)**, increasing age, obesity, smoking, family history, and certain medications **(Table 2).** Some causes of GERD may be prevented with simple behavior modifications while others require pharmacological or surgical interventions.

Who is affected?

GERD affects adults and children of any age. Prevalence is higher in Western countries and increases in adults over the age of 40. With the exception of pregnancy, there is not a significant difference of incidence between men and women. GERD is often a very common complaint among pregnant women, affecting as many as 25%. It is important to note that the true incidence of GERD may be understated because of the availability of over-the-counter (OTC) medications for self-treatment and the lack of a universal standard for diagnosing the disease.

How will I know if I have GERD?

Patient history plays a pivotal role in the diagnosis of GERD. The most common symptom of GERD is heartburn, which is a common complaint of both healthy individuals and those with GERD. Other common symptoms include belching, regurgitation, and hypersalivation. Some uncommon symptoms of GERD that would require further evaluation include cough, asthma, hoarseness, and dental erosions. Since the symptoms of GERD mimic those of other conditions, it is important that you see your physician for a proper diagnosis.

Complications of GERD

GERD is rarely a life-threatening condition, but left untreated, it can lead to some serious consequences. GERD has a greater impact on quality of life than do duodenal ulcers, untreated hypertension, angina, or menopause. Untreated GERD can be responsible for esophageal ulcerations, stricture, hemorrhage, pulmonary aspiration, perforation, and Barrett's esophagus, one of the most serious of the aforementioned complications. Barrett's esophagus is a pre-malignant change in the lining of the esophagus, which is the result of long-term contact of stomach acid with the esophagus. Patients who develop Barrett's

esophagus have a 30 to 60 times higher rate of esophageal cancer compared to the general population.

Prevention and Treatment

Lifestyle changes are generally considered prevention and first-line treatment for patients suffering from mild GERD. These behavioral changes can be initiated alone or in combination with OTC medications (antacids). Common recommendations are to avoid tight fitting clothing, lose weight, stop smoking, avoid trigger foods and alcohol, sleep on a foam wedge, and elevate the head of the bed 6 to 8 inches.[1,5]

If patients do not respond to lifestyle changes or OTC medication after two weeks, the next phase of treatment is generally the introduction of acid-suppressing therapy.[1,2] The backbone of acid-suppression therapy centers around the use of H2-receptor antagonists(H2RAs) and proton pump inhibitors (PPIs).

H2RA's have been around since the late 1970s.[2] These medications work by blocking histamine receptors on gastric parietal cells which helps reduce gastric acid secretion.5 H2RAs are generally most effective in mild cases of GERD, but may lose effectiveness over time since several studies have shown that people may develop a tolerance to the medication's effects.[1,2,5]

These medications are all available generically and in lower strengths OTC, which makes them an attractive option because of their low cost and wide availability. Members of this medication class includeAxid (nizatidine), Pepcid (famotidine), Tagamet (cimetidine), and Zantac (ranitidine).

PPIs have been shown to be superior in the treatment of patients with moderate to severe GERD.[1,2] PPIs work to inhibit acid secretion at the level of the acid pump which represents the final step of acid output in the stomach.[5] When you eat, your acid pumps are "turned on" to help digest food. PPIs are only able to inhibit pumps that are actively secreting acid.[2] For this reason, it is best to take a PPI thirty minutes to one hour before your first meal so the drug has time to dissolve and take effect. Compared to the H2RAs, PPIs tend to cost more but may be more effective for some patients. All PPIs are considered to be clinically similar and differ mostly in formulations available. There is one member of this class that is available generically, omeprazole and one member that is available OTC, Prilosec OTC. Members of this medication class include Aciphex (rabeprazole), Nexium (esomeprazole), Prevacid (lansoprazole), Prilosec (omeprazole), and Protonix (pantoprazole).

Table 1 – Foods that may irritate the symptoms of GERD

Foods
Peppermint
Garlic
Coffee
Citrus fruit juices
Alcohol
Fatty meals
Onions
Cola

Table 2 – Medications that may lower LES pressure

Drug Category	Examples
Anticholinergics	Amitriptyline, Nortriptyline
Barbiturates	Phenobarbital
Benzodiazepines	Diazepam, Alprazolam
Estrogen	Premarin
NSAID	Ibuprofen, Naproxen
Progesterone	Medroxyprogesterone
Narcotics	Morphine

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