

EDWARD J. SHARE, M.D.

CEDARS-SINAI MEDICAL OFFICE TOWERS
8631 W. THIRD ST. SUITE 1015E
LOS ANGELES, CALIFORNIA 90048
PHONE 310-652-4472
FAX 310-358-2266

GASTROENTEROLOGY AND HEPATOLOGY

GASTROESOPHAGEAL REFLUX (GERD)

Acid is normally produced in the stomach, and helps start the digestive process. One can digest food quite well without acid, however, as there are many “backup systems” for digestion in the GI tract. The stomach is normally resistant to any corrosive effects of acid, but if acid in any significant quantity, for a prolonged period of time, gets into the esophagus, larynx or the lungs, problems could result.

Gastroesophageal reflux disease (GERD), is a common condition where acid that is secreted in the stomach, passes up into the esophagus, where it doesn't belong. Acid reflux occurs transiently in most people, but when reflux is more prolonged, it may cause symptoms. Symptoms may be referred to as “esophageal” or “extra-esophageal”, such as laryngeal or pulmonary. The most common esophageal symptom is a burning discomfort behind the breastbone, typically worse after foods or liquids, sometimes worse when reclining, relieved rapidly by antacids, and referred to as “heartburn”. A less common esophageal symptom is difficulty swallowing, due to decreased esophageal muscle function, or a narrowing or stricture due to the inflammation caused by acid.

Acid reflux may irritate the throat and larynx, with resultant sore throat, hoarseness, excess phlegm production, chronic cough or throat clearing. This has been referred to as reflux laryngitis or laryngo-pharyngeal reflux (LPR). Rarely, pulmonary manifestations may result from acid entering the airway through the larynx and vocal cords, and cause wheezing or asthma. With chronic damage to the lining of the airways, resistance to infection may be lessened, and recurrent pneumonia may result.

Reflux can occur during the daytime or nighttime hours. The entire abdomen including the stomach is under positive pressure, whereas the chest, including the esophagus, is a negative pressure cavity. There is thus a tendency for stomach contents to be pushed up into the chest. What prevents this from happening is a sphincter muscle between the lower esophagus and the stomach. This “lower esophageal sphincter” normally remains closed except during a swallow, when food or liquids are pushed down the esophagus by normal peristaltic muscle activity, through this area into the stomach. This sphincter muscle may relax inappropriately, at random times, allowing for regurgitation of gastric contents including acid and/or bile, into the esophagus or higher. The strength of this sphincter may also be poor, so that contents may reflux frequently and for prolonged periods.

Treatment of GERD includes “lifestyle changes” such as loss of weight to reduce abdominal pressure, elevation of the head of the bed to prevent nighttime reflux, not eating at least four hours before retiring at night, eating smaller, more frequent meals, and avoiding irritants such as caffeine, alcohol and tobacco. Even small amounts of weight loss can be very effective in reducing reflux symptoms and the need for medications.

When needed, medication to reduce or stop acid production is usually a very effective treatment. Histamine H₂ antagonists like Tagamet, Zantac, Pepcid, and Axid reduce acid production, especially when fasting. However, proton pump inhibitors (PPIs) which include Prilosec (generic Omeprazole), Prevacid (Lansoprazole), Protonix, Aciphex, Nexium, Zegerid and Dexilant can reduce or stop acid production, even in the face of potent acid stimulation such as a meal. Occasionally, even these medications may not completely stop acid reflux, and symptoms may persist with high dose therapy. Sucking on sugar-free candy and/or gum (Biotene gum) may enhance saliva flow, assisting esophageal clearance of acid and may be a very helpful treatment when reflux is “resistant” to all treatments.

Many people have transient, intermittent heartburn and do well with over the counter preparations such as antacids or H₂ antagonists. Those who need more potent medication may be placed on higher dose “prescription strength” H₂ antagonists, which are especially helpful at bedtime, when there is no meal stimulation of acid. If these are not effective, then the PPIs may be necessary. PPIs are typically taken at mealtime, once a day, though twice a day may be necessary. As GERD tends to be a chronic problem, long-term “maintenance therapy” is often needed.

Treatment for laryngeal manifestations of reflux typically require “high dose” PPIs, twice daily, and require up to 3 months before a benefit is seen. It is estimated that 10 million Americans take PPIs on a daily basis, indefinitely, as they have chronic reflux. Fortunately, these medications have an excellent safety profile, having been in use now for over 20 years.

When lifestyle changes and potent anti-secretory medications are not effective in alleviating symptoms of reflux, one must reconsider the diagnosis, and, if acid reflux is documented, consider more aggressive measures. One can measure the amount and frequency of acid reflux with an “Ambulatory pH study”. The standard technique involves the placement of a very fine tube through the nose into the esophagus, where it remains for 24 hours, recording the acid level (pH) in the lower and upper esophagus. A wireless technology called the “Bravo” is also available where an acid sensing capsule is placed on the wall of the esophagus during an Upper GI Endoscopy, remains there until it is sloughed off in 5-7 days, and during the first 48 hours, sends information to a beeper-sized device worn by the patient. A pH Impedance study involves placement of a 24 hour nasal tube which can measure reflux not only of acid, but also non-acid stomach contents, including bile, pepsin and enzymes.

An upper GI endoscopy is a video-endoscopic examination of the esophagus, stomach and first part of the small intestine, performed under intravenous sedation. If inflammation or ulceration in the esophagus is detected, this is a very good indication that significant reflux is occurring. If one needs to determine if there is a motility abnormality of the esophageal muscle, one can place a tube through the nose into the esophagus, and over a 15-20 minute period, measure the strength of the lower esophageal sphincter

(LES), and the muscle function of the entire esophagus. This is referred to as an esophageal manometry study. An x-ray can also be performed with the swallowing of liquid barium contrast and barium soaked food, to determine if there is an abnormality of the esophagus or of its motility.

When acid reflux is documented, and there is a poor response to maximal medical therapy, surgery can be considered. A laparoscopic procedure where the stomach is wrapped around the lower esophagus, like a bun around a hot dog, is called a Nissen fundoplication. This is a rather effective procedure, with excellent results in perhaps 85% of individuals, but does have the risks of surgery, and the benefit may last only 10-20 years. A number of endoscopic methods have recently been purported to be effective with less risk, but the long term results are not in, a number of these have “passed by the wayside,” and these must still be considered experimental. Careful selection of patients for these more aggressive therapies is important to insure success.

Complications of chronic acid reflux include a change, or “metaplasia” of the lining cells of the esophagus, to a more stomach-like appearance, detected both through the endoscope and on biopsy. This may perhaps be a protective mechanism against the irritative effects of acid. This is called “Barrett’s Esophagus”, and if present in a significant length, perhaps 3 centimeters or more, may be associated with as much as a 10% lifetime risk of transition to esophageal cancer. “Barrett’s Metaplasia” involving a shorter segment of esophagus is thought to be of less significance, with a much lower risk of progression to cancer. Biopsies of the top of the stomach where it joins the esophagus can look like Barrett’s, but this is thought not to present a risk for esophageal cancer, and should be distinguished from Barrett’s type tissue taken from the esophagus. If Barrett’s Esophagus is found, close endoscopic biopsy monitoring, as frequently as every 1-2 years may be necessary, so that if worrisome changes start to occur, preventive therapy can be initiated. Therefore, anyone with a long history of reflux should have a screening endoscopic exam of the esophagus to determine if they have Barrett’s Esophagus.