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Gastroesophageal Reflux - Practical Management of a Common, Challenging Disorder

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Most people have some acid entering the esophagus during the course of a day. However, the amount of that acid is generally limited by a series of mechanisms:

1. The central defense is the gastroesophageal (GE) barrier, composed of the lower esophageal sphincter (LES) and its diaphragmatic support. The ligaments of the diaphragm and the segment of the esophagus within the abdomen contribute to the high-pressure zone that reduces the risk of reflux.
2. The normal motion of the esophagus (esophageal peristalsis) reduces the duration of exposure to acid by removing the bulk of refluxed gastric juice.
3. Saliva, delivered by voluntary swallowing, neutralizes the acid and restores the pH of the fluid in the esophagus to the neutral range.
4. Normal stomach (gastric) function is also defends against gastroesophageal reflux. Delayed gastric emptying can contribute to GERD. Most people with reflux discover that eating large meals makes the symptoms of reflux worse, underlining the importance of the volume of gastric contents for promoting reflux.

Because the primary motion of the esophagus (primary peristalsis) is triggered by voluntary swallowing, this only is present when you are awake. Although secondary peristalsis (peristalsis in the absence of a swallowing reflex) occurs at night, the movement of the esophagus is less frequent at night.

Factors contributing to acid in the esophagus at night include:

1. Supine posture (laying on the back)
2. Less frequent peristalsis
3. The absence of salivary neutralization of acid.

Hiatal Hernia and Gastroesophageal Reflux

Hiatal hernia was once thought to be synonymous with acid reflux. Many patients were then found to have hiatal hernia without reflux, while others presented with reflux symptoms without hiatal hernia. The large majority of patients with severe esophagitis have hiatal hernias; it is clear that a hiatal hernia is an important risk factor for severe reflux. But, without reflux, the overwhelming majority of hiatal hernias are asymptomatic and only a coincidental finding.

Secondary forms of Gastroesophageal Reflux (GER)

GER can be related to the use of a variety of drugs, some of which impair motility and others, such as non-steroidal anti-inflammatory drugs (NSAIDs), appear to directly disrupt the lining of the esophagus itself. There is also an acid-independent form of drug-induced esophagitis; certain caustic pills can cause direct contact damage to the esophagus when they are not swallowed promptly.

There are two important forms of GER that differ in symptom patterns, pathophysiology, natural history and therapy:

1. Mild GER (daytime, upright reflux) -- this form of gastroesophageal reflux is associated with a benign natural history. The principle treatment will be lifestyle measures and symptomatic therapy.
2. Classic, severe GER (nighttime, supine reflux) -- Reflux can occur in the daytime or nighttime and is generally unrelenting and recurring. The damage caused by this form of reflux is difficult to heal and may require a class of drugs called Proton Pump Inhibitors. Surgery may be necessary in this form of reflux.

Complications of Reflux

Complications of reflux may include pulmonary and upper airway disorders, such as asthma, chronic cough, laryngitis, periodontitis, pharyngitis, pneumonia, pulmonary fibrosis and bronchiectasis. GER should be considered in any unexplained inflammatory or infectious pulmonary condition, such as asthma and recurrent infections. Key features are nighttime or after-meal wheezing and/or cough.

Symptoms of Reflux

1. Heartburn is the characteristic symptom of GER. This is typically a burning, substernal discomfort or pain which rises from a point below the stomach or lower part of the sternum (breast bone) to the top of the sternum. Symptomatic improvement with acid inhibition provides the evidence that reflux is the cause of the problem.
2. Acid regurgitation is another common symptom of reflux. This is marked by the sudden, spontaneous appearance of a bitter, sour fluid in the throat or mouth.

3. Globus is a sensation of a knot in the throat related to reflux and possibly due to spasm of the upper esophageal sphincter in response to acid in the esophagus.
4. Progressive or consistent difficulty in swallowing (dysphagia) is clearly an indication for evaluation which should include endoscopy and possibly a barium swallow.

Noncardiac Chest Pain (NCCP)

This is unexplained chest pain or discomfort that occurs in the absence of demonstrated cardiac pathology. The question is whether this pain is the result of esophageal dysmotility, acid reflux, irritable esophagus or undetected cardiac pathology. The answer is probably that all these mechanisms can contribute to symptoms under different circumstances.

The Evaluation of GER

The presentation of GER is usually sufficiently characteristic to justify a clinical diagnosis in the large majority of cases. The confidence of the diagnosis is greatly increased with a good response to specific antireflux therapy. If there is a change in the pattern of the disease or if the pain is unrelieved by antacids as in the past then further cardiac workup is recommended.

Drug treatment of GER

1. Mild to moderate acid inhibition -- H₂ antagonist are the mainstay of routine therapy for mild GER. With the advent of generic cimetidine (Tagamet), reduced costs drive use of this drug as appropriate first-line therapy, particularly where intermittent use controls symptoms. Serious side effects are uncommon and the side effects of impotence and gynecomastia are generally only seen with higher doses.
2. Prokinetic Agents such as Reglan appears to increase the lower esophageal sphincter pressure thereby decreasing reflux.
3. Profound Acid Inhibition: PPI -- Prilosec and Prevacid provide effective control of acid secretion in the large majority of cases. These medications work less well when the patient is fasting so they should be given before meals rather than before bedtime. Dose response varies considerably among individuals, particularly at lower dosages.

Profound acid inhibition causes elevation of serum gastrin due to removal of gastric acid which stimulates the production of more gastrin. There are theoretical concerns about long-term consequences of elevated gastrin such as hypertrophy of gastric mucosa, gastric carcinoid tumors and possibly colon cancer. The clinical consequences of these problems remain largely theoretical, but still raise some concern. There is good evidence that *Helicobacter Pylori* infection accounts for a component of the elevated gastrin levels

seen with acid inhibition. Therefore, curing HP should reduce gastrin levels and lower the theoretical risks of prolonged gastrin elevation.

Life Style Measure and Patient-controlled therapy for GER

1. Avoid lying down within 3 hours of eating
2. Avoid food, beverages and eating habits that cause symptoms, i.e., fatty foods, large meals, chocolate, peppermint or spearmint, alcohol, caffeine-containing beverages or food
3. Stop-cigarette smoking
4. Suck hard candies or chew gum to increase saliva
5. Wear loss-fitting clothes
6. Lose weight
7. Raise head of bed 4 to 6 inches on blocks for nighttime symptoms.

Avoid drugs that reduce lower esophageal sphincter pressure and/or makes GER worse:

1. Progesterone (some birth control pills)
2. Theopylline
3. Tricyclic antidepressants
4. Narcotic Agents
5. Calcium Channel blockers
6. Serotonin Reuptake inhibitors
7. Sedatives
8. Alpha-adrenergic antagonists
9. Beta-adrenergic agonists

Proton Pump Inhibitors

These drugs quickly earned recognition as the most effective agents for the treatment of GER. Success is achieved with standard dosages in at least 80% of cases with severe GER and in a high percentage of milder cases where symptomatic control is targeted. Superiority of PPI over other forms of therapy has been firmly established in a wide range of well-controlled studies. Most GER patients respond to 20 mgs of Prilosec or 30 mg of Prevacid daily. About 10 to 20% require higher dosages. Higher doses are appropriate in instances where the patient fails to respond or a rapid initial healing response is indicated.

Sustained Therapy

The success of PPI in initial therapy does not obviate the need of sustained therapy in most cases of severe GER and in some of mild GER.

Surgery for GER

Two developments in the last decade have enhanced the attractiveness of surgery for GER. First, laparoscopic techniques have proven as effective as open surgery for fundoplication. The benefits of the laparoscopic approach are greatly decreased pain, discomfort and recovery time following surgery. Second, surgical technique has improved with the recognition that loose, short wraps can achieve good control of reflux with reduced risk of postoperative complications of gas bloat and dysphagia.

Surgery is generally an appropriate option in patients with moderate to severe reflux who are unable to tolerate or are noncompliant with medical management. Ideal surgical candidates would be younger patients (under 50) in good general health with no comorbidity that would complicate surgical outcomes.

This simply problem can have sustained profound health consequences. If you have heartburn, see your healthcare provider.

Remember, it is your life and it is your health.