

## Treatment of Gastroesophageal Reflux Disease

Gastroesophageal reflux disease (GERD) is defined by the American College of Gastroenterology as “symptoms or mucosal damage produced by the abnormal reflux of gastric contents into the esophagus”<sup>1</sup> and is associated with significant impairment in quality of life. It is estimated that over 40% of Americans experience GERD symptoms monthly. Reflux disease is also common in pregnancy and affects approximately 50% of pregnant women, many of whom experience symptoms daily.<sup>3</sup>

### KEY POINTS

- There are no data to demonstrate superiority of step-down therapy (starting with a PPI) vs. step-up therapy (starting with an H<sub>2</sub> antagonist); however, clinical trials have shown PPIs to control symptoms better than H<sub>2</sub> antagonists.<sup>1</sup>
- PPIs are often preferred as first-line therapy due to efficacy and tolerability and should be dosed 30-60 minutes prior to a meal to allow for maximum acid suppression.<sup>1</sup>
  - Twice daily dosing is generally not recommended for GERD.
- Mild-to-moderate GERD may be treated effectively with H<sub>2</sub> antagonists; cimetidine (Tagamet®) is not generally preferred because of numerous drug interactions.
- Long-term use of acid suppressant therapy has been associated with infrequent but significant clinical consequences such as vitamin B<sub>12</sub> deficiency, fractures, and upper respiratory infections.<sup>4,5,6</sup>
- All H<sub>2</sub> antagonists and most PPIs are FDA category “B” and are thought to be safe during pregnancy (see Table I).<sup>8</sup>

Currently, there are two major treatment approaches for GERD. “Step-up therapy” involves the initiation of OTC antacids and/or H<sub>2</sub> antagonists in addition to lifestyle changes with progression to prescription and/or surgical treatments if needed. In “step-down therapy,” a proton-pump inhibitor (PPI) is used initially at a dose that is appropriate for adequately controlling symptoms, but is decreased over time to the lowest effective dose. **While “step-down therapy” is routine in clinical practice and favored by many experts, there are no conclusive data as to cost-effectiveness or other considerations to support one treatment approach over another.**

There may be risks associated with long-term use of acid suppressants, including vitamin B<sub>12</sub> deficiency, impaired calcium absorption leading to fractures, and upper respiratory infections.<sup>4,5,6</sup> These risks have been reported in retrospective reviews and as such do not demonstrate a definitive causal link. However, clinicians should be aware of the potential long-term risks associated with these agents and use the lowest effective dose for the

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shortest duration possible to control symptoms. In addition, monitoring of symptom control as well as signs of these potential adverse effects is recommended.

**Table I. Agents used in the treatment of GERD**

Name	Dosing Range	Cost	Pregnancy Category	Comments
<b>H<sub>2</sub> Antagonists</b>				
Cimetidine (Tagamet®)	200-800 mg bid	\$19.99-35.99	B	Many drug interactions
Famotidine (Pepcid®)	10-40 mg bid	\$19.99-51.98	B	Available in combination with antacids as Pepcid Complete®
Nizatidine (Axid®)	75-150 mg bid-qid	\$51.66-103.97	B	
Ranitidine (Zantac®)	75-150 mg bid-qid	\$5.62-61.98	B	150mg strength now available OTC May be best H <sub>2</sub> antagonist in pregnancy <sup>9</sup>
<b>Proton Pump Inhibitors</b>				
Esomeprazole (Nexium®)	20-40 mg daily	\$149.99-164.31	B	
Lansoprazole (Prevacid®)	15-30 mg daily	\$154.31-160.66	B	Also available in packets for oral suspension and orally-disintegrating tablets
Omeprazole (Prilosec®)	20 mg daily	\$21.32 (generic)	C	Available OTC; likely safe in pregnancy
Pantoprazole (Protonix®)	40 mg daily	\$108.33 (generic)	B	Now available generically
Rabeprazole (Aciphex®)	20 mg daily	\$159.99	B	
<b>Prokinetic Agent</b>				
Metoclopramide (Reglan®)	5-15 mg qid	\$19.99-29.93	B	Extrapyramidal side effects Reserved for patients with motility disorders
<b>Mucosal Protectant</b>				
Sucralfate (Carafate®)	1 gram qid	\$43.99	B	Less effective than H <sub>2</sub> antagonists

\*Approximate cost per [www.drugstore.com](http://www.drugstore.com). Accessed May 2008. Cost based on twice daily dosing of H<sub>2</sub> antagonists, once daily dosing of proton pump inhibitors, and QID dosing of metoclopramide and sucralfate.

**References**

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(Available online at <http://idahodur.isu.edu>, information current as of May 2008)

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