

SUCRALFATE

- [Cytoprotective agent](#) commonly used to treat gastroesophageal reflux disease (GERD) and reflux esophagitis by forming a protective barrier over the damaged esophageal lining
 - **Mechanism:** Acts as a physical barrier, binding to proteins in erosion areas, often stimulating prostaglandin production.
 - It is taken orally, often four times daily on an empty stomach (1 hour before meals).
 - Considered very safe, with constipation being the most common side effect. It is considered safe to use during pregnancy.
 - **Limitations:** It does not stop the underlying production of acid, so it is often used for short-term relief or in combination with other GERD medications, rather than as a long-term cure
- *Elsborg L, Beck B, Stubgaard M. Effect of sucralfate on gastroesophageal reflux in esophagitis. Hepatogastroenterology. 1985 Aug;32(4):181-4. PMID: 3902601.*

BACLOFEN

- Baclofen (GABA_B receptor agonist) reduces the frequency of TLESRs, which are the main cause of reflux, by acting on the nervous system
- **Refractory GERD:** Studies indicate that adding baclofen (typically 5–20 mg) to PPI therapy improves symptoms in patients who do not respond to PPIs alone
- It is particularly useful for patients with significant postprandial reflux, regurgitation, belching, or rumination but long-term use is limited by side effects like drowsiness

DOMPERIDONE

- Prokinetic agent and dopamine antagonist - it increases LES tone and enhances upper GI motility, reducing the frequency of reflux.
- Adding domperidone to PPIs reduces global GERD symptoms
- **Side Effects:** Common, though usually mild, side effects include dry mouth, abdominal cramps, diarrhea, and rarely, potential cardiac risks (arrhythmias) or hyperprolactinemia.

Zamani NF, Sjahid AS, Tuan Kamauzaman TH, Lee YY, Islam MA. Efficacy and Safety of Domperidone in Combination with Proton Pump Inhibitors in Gastroesophageal Reflux Disease: A Systematic Review and Meta-Analysis of Randomised Controlled Trials. J Clin Med. 2022 Sep 7;11(18):5268. doi: 10.3390/jcm11185268. PMID: 36142915; PMCID: PMC9505562.

ANTACIDS

- **Mechanism:** They neutralize gastric acid and, in some cases, form a protective "raft" on top of stomach contents to prevent reflux.
- **Usage:** Used for short-term, immediate relief; not recommended for long-term daily management.
- **Limitations:** They do not treat the underlying causes of GERD and are ineffective against severe, frequent symptoms.
- **Side Effects:** Overuse may cause diarrhea, constipation, or kidney issues.
- **Drug Interactions:** They can interfere with the absorption of other medications; separate doses by at least 1–2 hours.

VONOPRAZAN

- **Mechanism:** As a P-CAB(Potassium Competitive Acid blocker), it inhibits proton pumps faster and more effectively than PPIs, providing near 100% pH4 time and better nocturnal acid control.
- **Usage:** Effective for both initial treatment of erosive esophagitis (EE) and maintenance. It is increasingly used for on-demand therapy in non-erosive reflux disease (NERD).
- **PPI-Resistant GERD:** Shows significant efficacy in patients who do not respond to traditional PPIs.
- **Advantages:** Unlike PPIs, it does not require acid activation, can be taken with or without food, and has a faster onset of action
- **Safety:** It has a favorable safety profile similar to PPIs

VONOPRAZAN

- FDA approve
- Vonoprazan was noninferior and superior to the PPI lansoprazole in healing and maintenance of healing of erosive esophagitis. This benefit was seen predominantly in more severe erosive esophagitis.

Vonoprazan Versus Lansoprazole for Healing and Maintenance of Healing of Erosive Esophagitis: A Randomized Trial

[Loren Laine](#) ^{1,2}   · [Kenneth DeVault](#) ³ · [Philip Katz](#) ⁴ · ... · [John Lowe](#) ⁶ · [Barbara Hunt](#) ⁷ · [Stuart Spechler](#) ⁸ ... Show more

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- Show it is highly effective for *H. pylori* eradication (often superior to PPIs), and superior to PPIs for healing erosive esophagitis and treating PPI-resistant GERD

GERD IN PREGNANCY

- GERD is reported by 40% to 85% of pregnant women, and its clinical presentation, diagnosis, and treatment are similar to that of nonpregnant adults.
- If lifestyle modification is not effective, pharmacologic therapy may be considered.
- Often, lifestyle modifications and antacids followed by the addition of sucralfate will be used first given the lack of systemic effects.
- H2RAs can be used next based on long-term historical use and reported safety.
- As with nonpregnant patients, PPIs are more effective than other medical therapies.
- If PPIs are used, dexlansoprazole, lansoprazole, pantoprazole, and rabeprazole are preferred. Omeprazole and esomeprazole are typically avoided due to findings of embryonic and fetal mortality in early animal studies, although subsequent human studies have noted no teratogenicity.

Maret-Ouda J, Markar SR, Lagergren J. Gastroesophageal reflux disease: a review. *JAMA*. 2020;324:2536-2547. doi: 10.1001/jama.2020.21360

Ali RA, Egan LJ. Gastroesophageal reflux disease in pregnancy. *Best Pract Res Clin Gastroenterol*. 2007;21:793-806. doi: 10.1016/j.bpg.2007.05.006

Body C, Christie JA. Gastrointestinal diseases in pregnancy: nausea, vomiting, hyperemesis gravidarum, gastroesophageal reflux disease, constipation, and diarrhea. *Gastroenterol Clin North Am*. 2016;45:267-283. doi: 10.1016/j.gtc.2016.02.005

REFRACTORY GERD

Differential Diagnosis:

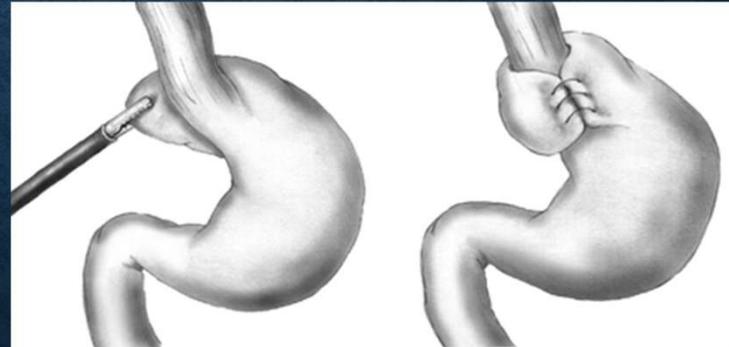
Non-GERD causes: Eosinophilic esophagitis, functional heartburn, rumination.

Approach:

- **Repeat Gastroscopy** (rule out eosinophilic esophagitis).
- **pH-impedance testing** (identify non-acid reflux).
- **Baclofen trial** (reduces TLESRs).

INTERVENTIONAL PROCEDURES

- **Endoscopic Therapies:** ARMA and Stretta
- **Surgery:** Antireflux surgery (e.g., Nissen fundoplication) or magnetic sphincter augmentation (LINX).



ANTI REFLUX MUCOSAL ABLATION (ARMA)

- Minimally invasive procedure developed to treat proton pump inhibitor (PPI)-refractory gastroesophageal reflux disease (GERD) by creating a tighter, more functional valve at the GOJ.
- [Anti-Reflux Mucosal Ablation](#) (ARMA) is a ~30-40 minute minimally invasive, endoscopic procedure for GERD that uses an [argon plasma coagulation](#) (APC) probe to create, scar, and tighten the tissue at the gastro-oesophageal junction. It serves as a non-surgical alternative for patients with [PPI-refractory reflux](#),

ARMA

Conclusion

ARMA displayed promising efficacy in improving GERD-related outcomes based on reductions in AET and DeMeester scores and achieving high clinical success rates.

Meta-Analysis > Surg Endosc. 2025 Aug;39(8):4752-4764. doi: 10.1007/s00464-025-11944-6.

Epub 2025 Jul 9.

The efficacy of antireflux mucosectomy (ARMS) and antireflux mucosal ablation (ARMA) for gastroesophageal reflux disease (GERD) by 24-h pH monitoring: systematic review and meta-analysis

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Affiliations + expand

PMID: 40634721 DOI: 10.1007/s00464-025-11944-6

ARMA

- **High Success Rates:** Studies indicate that ARMA achieves a high clinical success rate, generally reported around 70-87% in reducing symptoms and medication dependency.
- **Symptom and Acid Control:** ARMA consistently results in significant improvements in GERD-related quality of life (GERD-HRQL) scores. It leads to a notable reduction in acid exposure time (AET), with many patients achieving normal levels (AET < 4%).
- **Reduced Medication Use:** A majority of patients (roughly 50–65%) are able to completely discontinue PPIs, while others successfully reduce their dosage.
- **Durable Results:** Studies with one-year follow-up confirm that the symptom relief and improvements in reflux parameters (DeMeester score) are sustained.

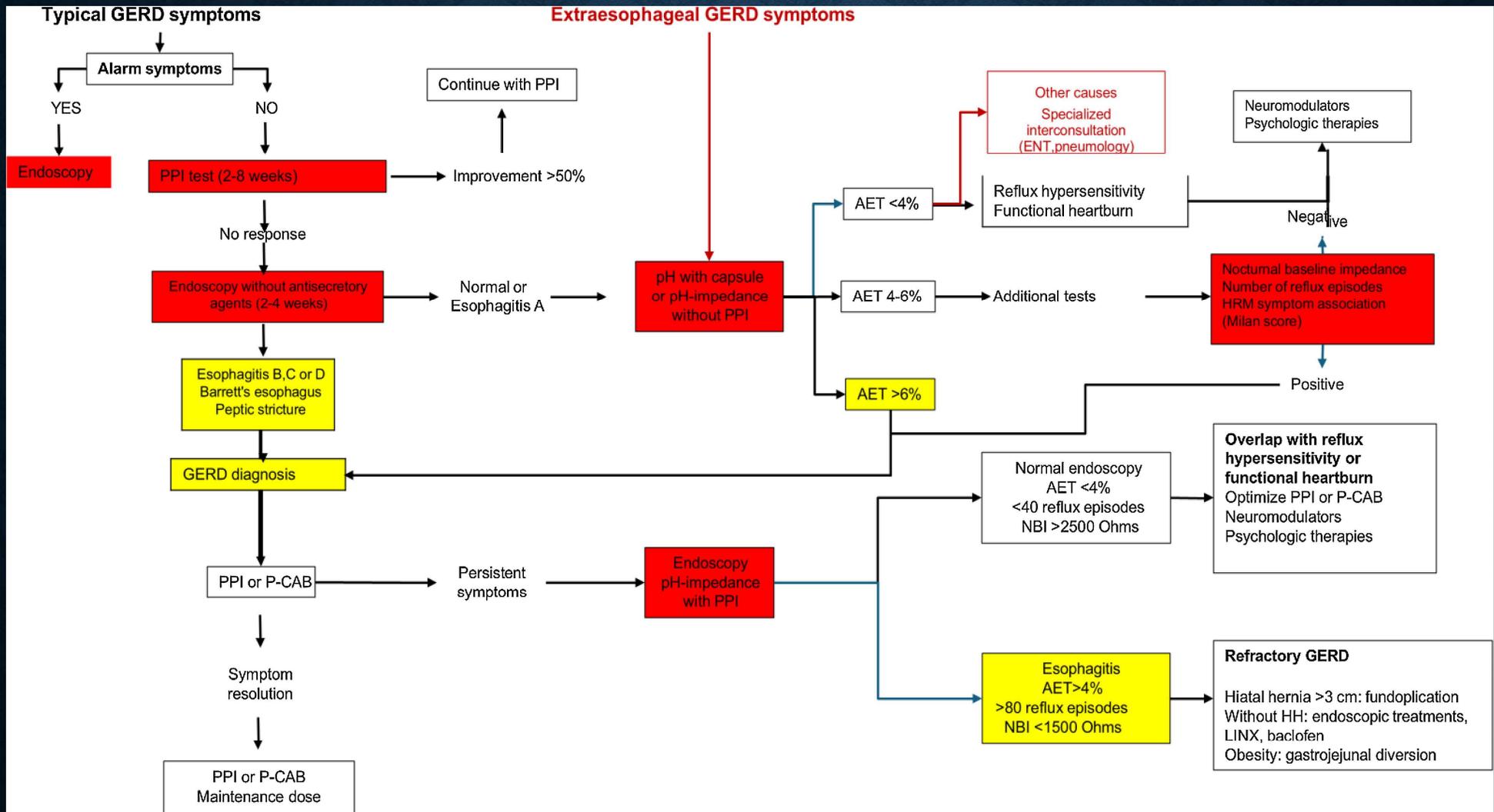
Al-Obaidi H, Saab O, Merza N, Wakil A, Rabeeah S, Al-Obaidi M, Alsagban A, Algodhi M, Baig MU, Kobeissy A, Sharaiha R. The efficacy of antireflux mucosectomy (ARMS) and antireflux mucosal ablation (ARMA) for gastroesophageal reflux disease (GERD) by 24-h pH monitoring: systematic review and meta-analysis. Surg Endosc. 2025 Aug;39(8):4752-4764. doi: 10.1007/s00464-025-11944-6. Epub 2025 Jul 9. PMID: 40634721.

CONTRAINDICATION FOR ARMA

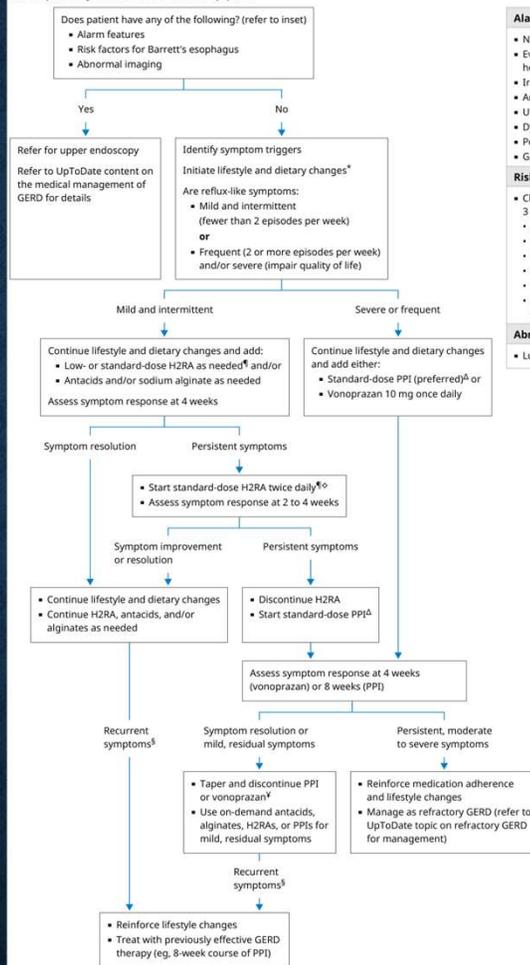
- Anatomical factors (Large Hiatus Hernia >3cm)
- Oesophageal motility issues
- Previous anti-reflux surgery
- Medical Conditions- portal hypertension, bleeding disorders, pregnancy or cancer

COMPLICATION

- Dysphagia – 12to 15 % requires dilatation
- Bleeding- minor
- Pain- Often Temporary
- Reflux persistence in 20%
- Rare cases- perforation, oesophageal tear



Initial empiric management of adults with reflux-like symptoms



Alarm symptoms suggestive of gastrointestinal malignancy

- New-onset dyspepsia in patient ≥60 years old
- Evidence of gastrointestinal bleeding (hematemesis, melena, hematochezia, occult blood in stool)
- Iron deficiency anemia
- Anorexia
- Unexplained weight loss
- Dysphagia or odynophagia
- Persistent vomiting
- Gastrointestinal cancer in a first-degree relative

Risk factors for Barrett's esophagus¹

- Chronic GERD (at least 5 years of persistent symptoms) plus 3 of the following additional risk factors:
 - Age >50 years
 - Male sex
 - Non-Hispanic White individual
 - Obesity
 - Tobacco use (past or current)
 - First-degree relative with Barrett's esophagus or esophageal adenocarcinoma

Abnormal imaging

- Luminal abnormality on imaging of upper gastrointestinal tract

This algorithm shows the initial empiric management of adults with reflux-like symptoms. Most patients with typical reflux-like symptoms of heartburn or regurgitation are candidates for empiric treatment. Refer to UpToDate content on the initial management of GERD in adults for details on lifestyle changes and medication selection and management.

GERD: gastroesophageal reflux disease; H2RA: histamine 2 receptor antagonist; PPI: proton pump inhibitor.

* Identify symptom triggers (eg, nocturnal symptoms, large meals, alcohol, acidic foods, tobacco use, or specific foods), and individualize lifestyle changes to address them.

† Low-dose H2RA options include twice-daily cimetidine 200 mg, famotidine 15 mg, and nizatidine 75 mg. Standard-dose H2RA options include twice-daily cimetidine 400 mg, famotidine 20 mg, and nizatidine 150 mg.

‡ Standard-dose PPI options include once-daily dexlansoprazole 30 mg, esomeprazole 40 mg, lansoprazole 30 mg, omeprazole 20 mg, pantoprazole 40 mg, or rabeprazole 20 mg.

§ If patient fails to respond to intermittent H2RA therapy, start PPI rather than twice-daily H2RA. Refer to UpToDate content for details.

¶ Approximately two-thirds of adults with GERD will have recurrent symptoms. Patients whose symptoms recur <1 month after discontinuing PPI or vonoprazan may require maintenance acid suppression. Patients without recurrent symptoms should continue lifestyle and dietary modifications.

‡ tapering is not required for short (eg, <4 months) duration of treatment. Refer to UpToDate content for details regarding tapering and discontinuing PPI or vonoprazan.

† Professional guidelines provide different criteria for screening for Barrett's esophagus and are based predominantly on expert consensus.

THANK YOU!