South African Journal of Gastroenterology and Hepatology. 2025;02(2):51-56
https://doi.org/10.36303/SAJGH.2999

SAJGH
ISSN 3078-1779

GUIDELINE

SAGES dyspepsia guidance

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Dyspepsia is a common condition characterised by upper abdominal symptoms, including epigastric pain, bloating, and nausea. This guidance document provides a framework for managing dyspepsia, emphasising initial clinical assessment, risk stratification, and tailored treatment approaches. Non-invasive testing for *Helicobacter pylori* (*H. pylori*) and empiric proton pump inhibitor (PPI) therapy are recommended for low-risk patients. High-risk patients, or those with persistent symptoms, require upper endoscopy to evaluate for underlying pathology. Lifestyle and dietary modifications, acid suppression therapy, and *H. pylori* eradication therapy are the key treatment components. The guidance also outlines algorithms for managing dyspepsia, promoting informed decision-making and improving patient outcomes. By implementing these, healthcare practitioners can enhance patient care, alleviate symptoms, and improve the quality of life and health outcomes for patients with dyspepsia.

Introduction

Dyspepsia refers to a collection of upper abdominal symptoms commonly associated with indigestion or an upset stomach. These symptoms typically include persistent or episodic epigastric pain or discomfort, often accompanied by:

- belching, regurgitation, or water brash,
- early satiety, postprandial fullness, or bloating,
- heartburn,
- nausea or vomiting, and
- retrosternal burning.[1]

Dyspepsia is broadly categorised as organic or functional. Organic dyspepsia results from an identifiable underlying condition, such as peptic ulcer disease, gastro-oesophageal reflux disease, or upper gastrointestinal (GI) malignancy.[2] In contrast, functional dyspepsia occurs without a clear organic cause and is often linked to dietary habits, stress, or lifestyle factors.[3] Accurate, initial evaluation and risk stratification are essential for guiding the effective management of patients with dyspepsia.

Diagnostic approach

Symptom assessment

- Characterise symptoms as described previously (epigastric pain, bloating, nausea, etc.).
- Evaluate for alarm features that increase the likelihood of serious underlying pathology, such as:
  - age ≥ 50 years,
  - dysphagia or odynophagia,
  - family history of upper GI or relevant genetic syndromes,
  - GI bleeding (haematemesis, haematochezia, or melena),
  - iron deficiency, with or without anaemia,
  - palpable abdominal mass,
  - severe or persistent abdominal pain,
  - ulcerogenic medication (e.g. nonsteroidal anti-inflammatory drugs [NSAIDs]), and
  - unexplained weight loss.[4]

Medical history

- Medications (NSAIDs, antibiotics, etc.).
- GI diseases or surgeries.

Physical examination

- Abdominal tenderness or masses.

Risk stratification: low-risk patients

Criteria

- Age < 50 years.
- No alarm features.
- No significant medical history.

Management

- Test for *Helicobacter pylori* (*H. pylori)* using non-invasive methods (urea breath or stool antigen testing).[5]

- Avoid serological testing in high-prevalence areas (e.g. South Africa), as it does not reliably differentiate between active and past infections.[6]
- Lifestyle and dietary modifications.
- Empiric treatment with an appropriately dosed proton pump inhibitor (PPI) for 6–8 weeks.
- If *H. pylori* tests positive, initiate eradication therapy.
- Reassess after therapy, and if symptoms persist or recur, proceed to upper endoscopy.[7]

High-risk patients or persistent symptoms

Criteria

- Age ≥ 50 years.
- Presence of alarm features (e.g. weight loss, GI bleeding, dysphagia, anaemia, family history of malignancy).
- Significant comorbidities or concerning medical history.

Management

- Upper endoscopy should be performed initially to evaluate for erosions, ulcers, neoplasms, or other mucosal pathology.[8]
- Rapid urease testing for *H. pylori*.
- Biopsy and histology to evaluate for *H. pylori*, inflammation, or malignancy.

Treatment and follow-up

- Lifestyle and dietary modifications.
- Antacids.
- Acid suppression therapy.
- *H. pylori* eradication therapy.
- Referral to a specialist for further management if necessary.
- All patients should undergo an index upper endoscopy, even in the event of an empiric therapeutic response, to exclude complicated diseases (e.g. metaplasia).[9]
- Further imaging should be considered in those with alarm features and/or concern for extraintestinal disease presenting atypically as dyspepsia.

Lifestyle and dietary modifications

- The following is advised in all cases of dyspepsia:[10]
- Avoid trigger foods. Common triggers include citrus fruits, tomatoes, chocolate, spicy foods, and fatty or fried foods.
- Eat smaller meals. Reduce symptoms by eating smaller, more frequent meals.
- Choose low-acid foods. Choose foods that are less likely to trigger acid production.
- Stay hydrated. Drink plenty of water to aid digestion.
- Maintain a healthy weight. Excess weight can put pressure on the stomach, worsening symptoms.
- Avoid tight-fitting clothing. Tight clothing can pressure the stomach, exacerbating symptoms.
- Elevate the head of the bed. Raise the head of the bed to reduce night-time symptoms.
- Avoid reclining after meals. Wait at least 2–3 hours after eating before lying down or going to bed, and as such, avoid eating too late.
- Manage stress. Stress can exacerbate symptoms. Consider stress-reducing techniques, like meditation or deep breathing.
- Other considerations:
- Avoid smoking. Smoking may cause laxity of the lower oesophageal sphincter and worsen symptoms.
- Limit caffeine and alcohol. Both may cause laxity of the lower oesophageal sphincter and increase acid production.
- Avoid carbonated drinks. Carbonated beverages may cause bloating and discomfort.

Antacids

Antacids are widely used, over-the-counter agents that provide relief from dyspepsia symptoms by neutralising stomach acid. They are particularly effective for managing heartburn, indigestion, and bloating. Typical active ingredients include calcium carbonate, magnesium hydroxide, or aluminium hydroxide. Although generally well-tolerated, antacids can cause side effects such as diarrhoea (magnesium-containing) or constipation (aluminium-containing) and may interact with other medications (e.g. anticoagulants). Antacids may be taken as needed or regularly, depending on symptom frequency. However, persistent or severe symptoms, especially if accompanied by alarm features, warrant further evaluation to exclude serious underlying pathology.

Acid suppression therapy

Acid suppressants reduce gastric acid secretion and are effective in relieving dyspepsia symptoms such as heartburn, indigestion, and bloating. While generally well-tolerated, their use should follow recommended dosing guidelines, with careful consideration of potential drug interactions and side effects. Again, persistent or worsening symptoms despite therapy warrant further evaluation.

- PPIs irreversibly inhibit gastric H+/K+ ATPase (proton pumps), leading to potent and long-lasting suppression of gastric acid secretion. They are the first-line treatment for dyspepsia due to their superior efficacy and convenient once-daily dosing. Common PPIs include esomeprazole, dexlansoprazole, lansoprazole, pantoprazole, and rabeprazole. PPIs are typically used in more severe cases or when histamine type 2 receptor antagonists (H2RAs) are ineffective. Although generally well-tolerated, the long-term use of PPIs may be associated with potential risks, such as osteoporosis, nutrient/vitamin deficiencies, and *Clostridioides difficile* infection.
- H2RAs reduce gastric acid secretion by blocking the histamine type 2 (H2) receptors on parietal cells. They are effective for mild-to-moderate symptoms and may be used as an alternative to PPIs. Common H2RAs include cimetidine, famotidine, and nizatidine. Note that ranitidine has been withdrawn due to safety concerns.

- Potassium-competitive acid blockers (PCABs) are a newer class of acid-suppressing agents that act by competitively inhibiting potassium binding sites on gastric proton pumps. PCABs, such as vonoprazan, may offer an alternative to PPIs and H2RAs, particularly in patients who are unresponsive to or intolerant of these therapies. Ongoing research is evaluating the long-term safety and efficacy of these treatments in managing dyspepsia.

H. pylori eradication therapy[5]

First-line treatment

1. Low clarithromycin resistance (< 15–20%):
   - PPI-clarithromycin-amoxicillin triple therapy.
   - PPI-clarithromycin-metronidazole triple therapy for patients allergic to penicillin.

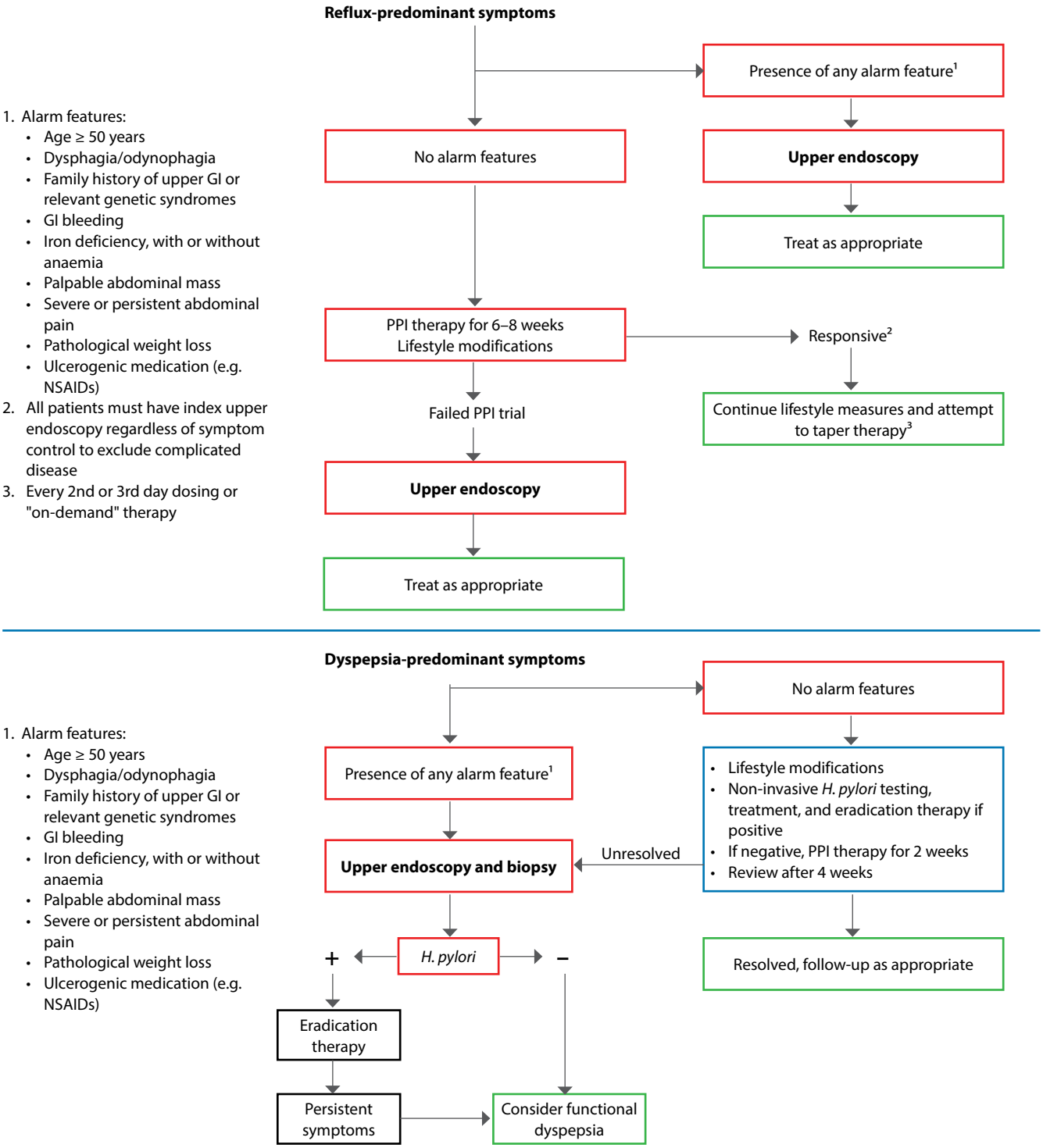

Figure 1: Algorithm framework for managing dyspepsia according to reflux- or dyspepsia-predominant symptoms
GI – gastrointestinal, *H. pylori* – *Helicobacter pylori*, NSAID – nonsteroidal anti-inflammatory drug, PPI – proton pump inhibitor

2. High clarithromycin resistance (> 20%) or unknown resistance:

- Bismuth-containing quadruple therapy (PPI, bismuth, metronidazole, and tetracycline).
- Non-bismuth concomitant quadruple therapy (PPI, amoxicillin, clarithromycin, and metronidazole) if bismuth-containing quadruple therapy is unavailable.

Second-line treatment

1. Bismuth-containing quadruple therapy:

- Recommended after failure of first-line clarithromycin-containing treatment, especially in areas with high quinolone resistance.

2. Levofloxacin-containing triple therapy:

- Alternative option but not recommended in areas with high quinolone resistance.

3. Levofloxacin plus bismuth-containing quadruple therapy:

- Encouraging results as a second-line therapy.

Third-line treatment

1. PPI-amoxicillin high-dose dual therapy:

- An option with an 81% eradication rate.

2. Rifabutin-based therapy:

- Acceptable cure rates due to low resistance.

Prescription

- Dosing:
  - Each prescribed agent is taken twice daily (q12h).
- Duration:
  - 14 days is recommended for most regimens.
  - 10 days may be sufficient for some regimens (e.g. concomitant therapy, depending on local efficacy data).

Confirmation of eradication

- Eradication of *H. pylori* should be confirmed using a non-invasive test, such as a urea breath test or stool antigen test, at least four weeks after completion of eradication therapy.[11] This allows for an accurate assessment of treatment success.
- Susceptibility or molecular resistance testing is recommended to guide subsequent therapy after two treatment failures, increasing the likelihood of eradication.[5]

Dyspepsia algorithms

Figure 1 illustrates the algorithm of a comprehensive framework for managing dyspepsia, guiding practitioners through a multifaceted approach incorporating initial clinical assessment, lifestyle modifications, pharmacological interventions, and further diagnostic evaluation, particularly upper endoscopy. While intended to support informed decision-making, it does not dictate a standard of care, advocate, or discourage specific therapeutic approaches. Importantly, the treating practitioner retains discretion in determining the best approach for each patient. The goal is to enhance patient care, alleviate dyspeptic symptoms, and improve the quality of life and health outcomes.

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