Primary care of GORD in South Africa is well managed, mainly as a result of the availability of safe and effective medical treatment in the form of proton pump inhibitors (PPIs). However, there are still some unmet clinical needs and issues in clinical practice; this review of a very common disease seeks to provide clinically relevant insights in a brief ‘issues and answers’ format.

Pathophysiology gives insight into the appropriate treatment of the disease

GORD is an extremely common disease with a prevalence of 25% in Westernised countries. GORD is associated with obesity, but the basic underlying mechanism of the disease is transient, inappropriate relaxation of the lower oesophageal sphincter (TLOS RS) (Figure 1).

The second most important cause is oesophageal hypersensitivity, which is also associated with failure to respond to PPI therapy. The mechanism underlying oesophageal hypersensitivity is still unknown, but is likely to involve some degree of abnormal mucosal integrity.

The reflux of acidic contents into the oesophagus may or may not result in significant oesophageal lesions that are visible on endoscopy.

Figure 2 shows the spectrum of GORD and the relationship between acid exposure and response to PPIs, with the influence of hypersensitivity reflecting a diminished response to PPI therapy.

The presence of a significant hiatus hernia aggravates reflux, but treatment generally focuses on the reflux symptoms rather than on surgery to correct the hernia.

The reflux of acid into the oesophagus is mainly responsible for the majority of GORD-related symptoms. This was clearly shown when the acid suppressors, the PPIs, were developed, with 85-95% of GORD cases responding to PPI therapy.

How is GORD diagnosed?

In the majority of cases, the diagnosis of GORD is made on the basis either of a trial treatment with PPIs (especially at primary care level with improvement in symptoms on treatment being diagnostic) or endoscopy.

The acid-sensitive oesophagus and functional heartburn are regarded as non-erosive reflux disease (NERD). In pH-impedance studies, strict diagnostic criteria are used to differentiate between pathological acid exposure versus acid-sensitive cases.
Complicated cases, where neither of these approaches is definitive, can be addressed using pH-impedance testing.

The presence of oesophageal ulcers on endoscopy is definitive of the diagnosis of GORD. These lesions are graded according to severity. The grading system commonly used in South Africa is the Los Angeles classification (grades A to D).

Unfortunately, endoscopy has been associated with over-diagnosis, if inflammation/redness is used as a diagnostic criterion. There are, however, strict and clear guidelines on the grading of endoscopic changes and if these are used conscientiously then over-diagnosis does not occur.

In some 60% of cases, endoscopy does not identify ulcerative changes. This is referred to as non-erosive reflux disease (NERD). Endoscopy is not only performed to establish oesophagitis but also to exclude/identify other conditions such as Barrett’s oesophagus (pre-cancerous state), gastric cancers and peptic ulcer disease (PUD).

In the case of NERD, a trial of full-dose PPIs over 4-8 weeks, with subsequent alleviation of symptoms, establishes the diagnosis.

When and how is pH-impedance testing used?

pH-impedance testing is done when either a trial of PPI therapy does not relieve symptoms or endoscopy fails to establish a diagnosis of GORD.

This test records the pH in the oesophagus over a normal 24-hour period and correlates symptoms with the presence of reflux. These devices have improved over the years and are now more accurate and able to measure bolus movement in the oesophagus, avoiding misdiagnosis due to undeclared intake of foods/fluids that influence pH.

A typical trace is shown in Figure 3. As this is used in only a very small number of patients, there are only four sites in the country offering this procedure. It is appropriate for difficult cases.

When should GORD be suspected from extra-oesophageal symptoms?

There is an established association between GORD and chronic coughing, late-onset asthma, laryngitis and dental erosions (Figure 4).

In cases of late-onset asthma, clinicians should look for GORD; in chronic cough, GORD should be excluded as a potential cause of the coughing. Chest pain is commonly associated with GORD and cardiac involvement must be excluded. Pneumonia, bronchitis and pulmonary fibrosis can also be associated with GORD.

Referral from other specialists or general practitioners of patients with suspected GORD may well lead to the use of the pH-impedance test as the diagnostic tool of choice.
Gastro-oesophageal reflux disease (GORD/GERD)

**Issue**

What is the value of lifestyle modification in the treatment of GORD?

Lifestyle modification can reduce GORD symptoms. Weight reduction and smoking cessation have been shown to reduce symptoms, according to a recent review of published studies.

Modification of meal size (not eating large meals late at night) is helpful. However, there is limited evidence for alcohol avoidance and reduced intake of carbonated drinks, caffeine, fat, spicy foods and chocolate. Elevation of the head of the bed can be helpful.

In essence, except for stopping smoking and weight reduction, the benefits of lifestyle modification are really only of value in mild GORD and may be more troublesome than the symptoms they seek to reduce.

**Issue**

Treatment options: The value of antacids, alginates, histamine \(H_2\)-receptor antagonists and PPIs

The value of antacids and alginates is primarily for the ongoing management of symptoms, while PPIs are clearly established as the mainstay of medical therapy.

A recent meta-analysis of the value of PPIs, as compared to \(H_2\)-receptor agonists in patients with endoscopically proven erosive or ulcerative oesophagitis, clearly endorses the superior efficacy of PPIs. They achieved 85% healing of oesophagitis as compared to the 51% healing using \(H_2\)-receptor antagonists.

PPI therapy also reduced heartburn symptoms more effectively than \(H_2\)-receptor antagonists and effectively maintained the healing of oesophagitis. PPIs are extremely effective in the treatment of some complications, such as peptic strictures.

As a result of their efficacy and general safety, PPIs have progressively replaced other less effective classes of drugs such as antacids, alginates (which form a cover over the stomach acid) and \(H_2\)-receptor antagonists.

In summation, PPIs have very few long-term complications. However, clinicians must be aware of the interaction with clopidogrel, the association with osteoporosis and bacterial overgrowth in the small intestine. In immunocompromised patients, pneumonia may occur. Electrolyte malabsorption, particularly of magnesium, may also be experienced by some patients.

**Issue**

So who needs surgery?

GORD patients with volume symptoms, despite PPI therapy, should be considered for surgery as should patients with established complications such as pulmonary fibrosis. There is a group of patients with severe symptoms who will not benefit from surgery. All patients considered for surgery should first be seen by a specialist to exclude NERD. The poor reputation of anti-reflux surgery is primarily the result of surgery being undertaken in the wrong patients.

It is essential that patients be well informed and advised of the possibility of dyspepsia, bloatedness, dysphagia and that the benefits of procedure may not last longer than five years.

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**Figure 4. Oesophageal manifestations of GORD**

- **Oesophageal manifestations (Heartburn/Regurgitation)**
  - ENT
    - Laryngitis
    - Sinusitis
    - Otitis
    - Ulcers
    - Granuloma
    - Polyps
  - Pulmonary
    - Asthma
    - Chronic cough
    - Pneumonia
    - Bronchitis
    - Interstitial fibrosis

- **Extra-oesophageal manifestations**
  - Cardiac
    - Chest pain
    - Sinus arrhythmia
  - Others
    - Dental erosions
    - Halitosis

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**Figure 4. Oesophageal manifestations of GORD**
Over the past few years, there has been a trend towards simplifying the surgical approach by using simpler Toupet procedures rather than techniques such as Nissen fundoplication. With the former, the upper portion of the stomach (fundus) is wrapped around the lower end of the oesophagus and stitched into place, thereby supporting the closure of the lower oesophageal sphincter (Figure 5).

New therapies
On the horizon are new endoscopic procedures for GORD. New medications, working on the valve of the lower oesophageal sphincter and on the gamma-aminobutyric acid (GABA) receptor system, are also being developed and tested in clinical trials.

Issue
Summation: when to refer?
- For patients presenting with dyspepsia together with significant acute gastrointestinal bleeding, refer immediately (on the same day) to a specialist.
- Review medications for possible causes of dyspepsia (for example, calcium antagonists, nitrates, theophyllines, bisphosphonates, corticosteroids and non-steroidal anti-inflammatory drugs (NSAIDs)). In patients needing referral, suspend NSAID use.
- Think about the possibility of cardiac or biliary disease as part of the differential diagnosis.
- If patients have had a previous endoscopy and do not have any new alarm signs, consider continuing management according to previous endoscopic findings.

References
5. Amended from NICE Clinical Guidelines. 184, modified September 2014 (www.nice.org.uk).