**Heartburn**

Heartburn is a form of indigestion, or dyspepsia, also more formally known as gastro-oesophageal reflux disease (GORD). Symptoms of heartburn are caused when there is reflux of gastric contents, particularly acid, into the oesophagus.

**Significance of questions and answers**

**Age** The symptoms of reflux and oesophagitis occur more commonly in patients aged over 55 years. Children with symptoms of heartburn should therefore be referred to their doctor.

**Symptoms/associated factors**

A burning discomfort is experienced in the upper part of the stomach in the midline (epigastrium), and the burning feeling tends to move upwards behind the breastbone (retrosternally) Heartburn is often brought on by bending or lying down. It is more likely to occur in those who are overweight, Alcohol and smoking are known to cause or aggravate heartburn. Stress is also a factor in the condition. A large number of medicines(calcium channel blockers, anticholinergics (particularly those with more pronounced anticholinergic effects such as amitriptyline), theophylline and nitrates. The phosphodiesterase inhibitors, such as sildenafil and tadalafil,aspirin,prednisolon,biphosphonates). The reason for this is that these types of drugs cause relaxation of the lower end of the oesophagus.

**Pregnancy :**The symptoms are caused by an increase in intra-abdominal pressure and incompetence of the lower oesophageal sphincter. It is thought that hormonal influences, particularly progesterone, are important in the lowering of sphincter pressure

**When to refer**

Failure to respond to antacids

Related to prescribed medication

Pain radiating to arms

Difficulty in swallowing

Regurgitation

Long duration

Increasing severity

Children

**Treatment timescale** If symptoms have not responded to treatment after 1 week, the patient should see a doctor.

**Non pharmacological treatment**

 **a.** Dietary modifications if symptoms are associated with certain foods or drinks.

 i. Avoid aggravating foods and beverages; some may reduce LES pressure (e.g., alcohol, caf-feine, chocolate, citrus juices, garlic, onions, peppermint, spearmint) or cause direct irritation (e.g., spicy foods, tomato juice, coffee).

 ii. Reduce fat intake (high-fat meals slow gastric emptying) and portion size.

 iii. Avoid eating 2–3 hours before bedtime.

 iv. Remain upright for 2 hours after meals.

**b.** Weight loss if overweight or recent weight gain (Conditional/Moderate)

**c.** Reduce or discontinue nicotine use in patients who use tobacco products (affects LES).

**d.** Elevate head of bed and avoid meals 2–3 hours before bedtime if nocturnal symptoms (Conditional/Low).

**e.** Avoid tight-fitting clothing (decreases intra-abdominal pressure).

**f.** Avoid medications that can reduce LES pressure

**Management**

1. **Antacids**

Neutralizing acid and raising intragastric pH results in decreased activation of pepsinogen and increased LES pressure; rapid onset of action but short duration, necessitating frequent dosing

Preparations that are high in sodium should be avoided by those whoare pregnant and anyone on a sodium-restricted diet (e.g.those with heart failure or kidney or liver problems).

1. **Alginates**

Alginates form a raft that sits on the surface of the stomach contents and prevents reflux.Some alginate-based products contain sodium bicarbonate,which, in addition to its antacid action, causes the release of carbon dioxide in the stomach, enabling the raft to float on top of the stomach contents.

1. **H2 antagonists (ranitidine)**

Ranitidine can be used for the short-term treatment of dyspepsia, hyperacidity andheartburninadults andchildren over 16. Ranitidine has both a longer duration of action (up to 8–9h) and a longer onset of action than antacids. It works by blocking the action of histamine at the histamine H2 receptors of the parietal cells in the stomach. This decreases the production of stomachacid.The suppression is not as profound astheeffect seen with PPIs. should be taken an hour before food. Ranitidine is licensed for OTC use in a dose of 75 mg with a maximum daily dose of 300 mg. It can be used for up to 2 weeks.

1. **Proton pump inhibitors**

PPIs work by suppressing gastric acid secretion in the stomach. They inhibit the final stage of gastric hydrochloric acid production by blocking the hydrogen–potassium ATPase enzyme in the parietal cells of the stomach wall (also known as the proton pump). A single treatment can last up to 24 h, or more.

Omeprazole and rabeprazole are licensed OTC as 10 mg tablets and esomeprazole and pantoprazole as 20 mg tablets. It may take a day or so for them to start being fully effective. During this period a patient with ongoing symptoms may need to take a concomitant antacid.

If no relief is obtained within 2 weeks, the patient should be referred to the GPsurgery. PPIs should not be taken during pregnancy or while breastfeeding. Drowsiness has been reported but rarely.Treatment with PPIs may cause a false negative result in the ‘breath test’ for Helicobacter.

**Indigestion**

Indigestion (dyspepsia) is upper abdominal discomfort or pain that may be described as a burning sensation, heaviness or an ache. It is often related to eating and may be accompanied by symptoms such as nausea, fullness in the upper abdomen or belching.

**Significance of questions and answers**

Symptoms: include poorly localised upper abdominal (the area between the belly button and the breastbone) discomfort that may be a burning, heaviness or ache.

**Age:** Indigestion is rare in children. Abdominal pain is a common symptom in children and is often associated with an infection. Be cautious when dealing with first-time indigestion in older people and refer them to the GPfor a diagnosis.

**Duration/previous history** Indigestion that is persistent or recurrent should be referred to the doctor

**Details of pain/associated symptoms**

Ulcers may occur in the stomach (gastric ulcer) or in the first part of the small intestine leading from the stomach (duodenal ulcer). Duodenal ulcers are more common and have different symptoms from gastric ulcers. Typically, the pain of a duodenal ulcer is said to be localised to the upper abdomen, It is relieved by food (although it may be aggravated by fatty foods) and antacids. The pain of a gastric ulcer is in the same area but less well localised.It is often aggravated by food and may be associated with nausea and vomiting. Appetite is usually reduced, and the symptoms of gastric ulcer are persistent and severe.

**Gallstones:** Single or multiple stones can form in the gall bladder ,Biliary colic may be precipitated by a fatty meal. Sometimes these pains can be confused with that of a duodenal

**Gastro-oesophageal reflux**

**Irritable bowel syndrome**

**Atypical angina**

**Precipitating factors**

Fatty foods, or excessive consumption, can cause indigestion, aggravate ulcers, **Smoking** predisposes to, and may cause, indigestion and ulcers

Medication: NSAID or aspirin, iron

**Alarm symptoms and indigestion: Reasons for referral**

 **■**55 years of age or over

■Unexplained weight loss(without meaning)

■Difficulty swallowing(dysphagia)

■Persistent or recurrent nausea or vomiting

■Iron deficiency anaemia

■Patient concerned by a lump or mass in the stomach

■Blood in the vomit or blood in the stools(which may be black and tarry–melaena

■Persistent abdominal pain,particularly if severe or unrelated to meals.

■No response to H2 antagonists or PPI.

**Treatment timescale** If symptoms have not improved within 5 days,the patient should see the doctor.

**Management**

**Antacids**

In general, liquids are more effective antacids than are solids; they are easier to take, work more quickly and have a greater neutralising capacity. The liquid allows a large surface area to be in contact with the gastric contents. Some patients find tablets more convenient, and these should be well chewed before swallowing for the best effect. It might be appropriate for the patient to Antacids are best taken about 1 hr after a meal because the rate of gastric emptying has then slowed and the antacid will therefore remain in the stomach for longer. Taken at this time antacids may act for up to 3 h compared with only 30 min–1 h if taken before meals. Repeated doses may be needed for full effect.

**Sodium bicarbonate** is water soluble, acts quickly, is an effective neutraliser of acid and has ashort duration of action.It should not be used alone for the relief of indigestion, but it is present as an ingredient in many indigestion remedies. However, antacids containing sodium bicarbonate should be avoided in patients if sodium intake should be restricted (e.g. in patients with congestive heart failure). It increases excretion of lithium, leading to reduced plasma levels.

**Aluminium and magnesium salts**

Aluminium-based antacids are effective, but they tend to be constipating. The use of aluminium antacids is best avoided in anyone who is constipated and in elderly patients who have a tendency to constipation. Magnesium salts are more potent acid neutralisers than aluminium salts.They tend to cause osmotic diarrhoea Combination products containing aluminium and magnesium salts may cause less bowel disturbance and are therefore valuable preparations for recommendation by the pharmacist.

**Calcium carbonate**

It acts quickly, has a prolonged action and is a potent neutraliser of acid. It can cause acid rebound and ,if taken overlong periods at high doses,can cause hypercalcaemia and so should not be recommended for long-term use.can cause hypercalcaemia, metabolic alkalosis and renal insufficiency; its symptoms are nausea, vomiting, anorexia, headache and mental confusion.

**Dimeticone (dimethicone)**

Dimeticone is sometimesaddedtoantacidformulationsforitsdefoaming properties. Theoretically, it reduces surface tension and allows easier elimination of gas from the gut by passing flatus or eructation (belching). Evidence of benefit is uncertain.

**Interactions with antacids**

Taking the doses of antacids and other drugs at least 1 h apart should minimise interactions. Antacids may reduce the absorption of some antibiotics and antifungals (tetracyclines, azithromycin, itraconazole, ketoconazole, ciprofloxacin, norfloxacin, rifampicin). Absorption of angiotensin-converting enzyme (ACE) inhibitors, phenothiazines, gabapentin and phenytoin may also be reduced.

Sodium bicarbonate may increase the excretion of lithium and lower the plasma level. The changes in pH that occur after antacid administration can result in a decrease in iron absorption if iron is taken at the same time.

**Ranitidine** can be used for the short-term treatment of dyspepsia and heartburn .Treatment with ranitidine is limited to a maximum of 2 weeks.