

Gastrointestinal Tract Problems

Mouth ulcers

Heartburn



- Mouth ulcers **are extremely common**, affecting as many as one in five of the population, and are a recurrent problem in some people.
- They are classified as aphthous (minor or major) or herpetiform ulcers.
- Most cases (more than three-quarters) are minor aphthous ulcers, which are self-limiting.
- Ulcers may be due to a variety of causes including infection, trauma and drug allergy.
- However, occasionally mouth ulcers appear as a symptom of serious disease such as carcinoma.

Age

- Patients may describe a history of recurrent ulceration, which began in childhood and has continued ever since.
- Minor aphthous ulcers are more common in women and occur most often between the ages of 10 and 40 years.

Table 1 The three main types of aphthous ulcers.

Minor	Major	Herpetiform
80% of patients	10–12% of patients	8–10% of patients
2–10 mm in diameter (usually 5–6 mm)	Usually over 10 mm in diameter; may be smaller	Pinhead-sized
Round or oval	Round or oval	Round or oval, coalesce to form irregular shape as they enlarge
Usually not very painful	Prolonged and painful ulceration; may present patient with great problems – eating may become difficult	May be very painful

- Major aphthous ulcers are uncommon, severe variants of the minor ones.
- The ulcers which may be as large as 30 mm in diameter can occur in crops of up to 10.
- Sites involved are the lips, cheeks, tongue, pharynx and palate. They are more common in sufferers of **ulcerative colitis**.

- Herpetiform ulcers are more numerous, smaller and, in addition to the sites involved with aphthous ulcers, may affect the **floor** of the mouth and the **gums**.
- Systemic conditions such as Behçet's syndrome and erythema multiforme may produce mouth ulcers, but other symptoms would generally be present

- **Duration**

- Minor aphthous ulcers usually heal in less than 1 week;
- major aphthous ulcers take longer (10–30 days).
- Where herpetiform ulcers occur, fresh crops of ulcers tend to appear before the original crop has healed, which may lead patients to think that the ulceration is continuous.

Oral cancer

- Any mouth ulcer that has persisted for longer than 3 weeks requires **immediate referral** to the dentist or doctor because an ulcer of such long duration may indicate serious pathology, such as carcinoma.
- Common locations include the lateral border of the tongue, lips, floor of the mouth and gingiva.
- The key point to raise suspicion would be a lesion that had lasted for **several weeks or longer**.
- Oral cancer is more common in smokers than non-smokers.

Previous history

- There is often a **family history** of mouth ulcers (estimated to be present in one in three cases).
- Minor aphthous ulcers **often recur**, with the same characteristic features of size, numbers, appearance and duration before healing.
- The appearance of these ulcers may follow **trauma** to the inside of the mouth or tongue, such as biting the inside of the cheek while chewing food.
- Episodes of ulceration generally recur after 1–4 months.

- In women, minor aphthous ulcers often precede the start of the **menstrual period**.
- Stress and emotional factors at work or home may precipitate a recurrence or a delay in healing but do not seem to be causative.

- Deficiency of **iron, folate, zinc or vitamin B12** may be a contributory factor in aphthous ulcers.
- **Food allergy** is occasionally the causative factor and it is worth enquiring whether the appearance of ulcers is associated with particular foods.

Other symptoms

- The severe pain associated with major aphthous or herpetiform ulcers may mean that the patient finds it difficult to eat and, as a consequence, weight loss may occur.
- **Weight loss** would therefore be an indication for referral.
- Mouth ulcers may be associated with inflammatory bowel disorders or with coeliac disease.
- Therefore, if persistent or recurrent **diarrhoea** is present, referral is essential.
- Rarely, ulcers may be associated with disorders of the blood including anaemia, abnormally low white cell count or leukaemia.

Medication

- The pharmacist should establish the identity of any current medication, since mouth ulcers may be produced as a side effect of drug therapy.
- Drugs that have been reported to cause the problem include
 - *aspirin* and other (NSAIDs),
 - cytotoxic drugs,
 - *nicorandil*,
 - *beta blockers* and
 - *sulphasalazine* (sulfasalazine).
 - *feverfew* (used for migraine)

When to refer

Duration of longer than 3 weeks

Associated weight loss

Involvement of other mucous membranes

Rash

Suspected adverse drug reaction

Diarrhoea

Behcet's syndrome:

there is progression with involvement of sites other than the mouth. Most commonly, the vulva, vagina and eyes are affected,

- **Treatment timescale**

- If there is no improvement after 1 week, the patient should see the
- doctor.

Management

- Symptomatic treatment of minor aphthous ulcers can be recommended by the pharmacist and can relieve pain and reduce healing time.
- Active ingredients include antiseptics, corticosteroids and local anaesthetics.
- Gels and liquids may be more accurately applied using a cotton bud or cotton wool.
- Mouthwashes can be useful where ulcers are difficult to reach.

Chlorhexidine gluconate mouthwash

- There is some evidence that *chlorhexidine* *mouthwash* reduces duration and severity of ulceration.
- The rationale for the use of antibacterial agents in the treatment of mouth ulcers is that *secondary bacterial infection* frequently occurs.
- Such infection can increase discomfort and delay healing.
- Regular use can stain teeth brown – an effect that is not usually permanent.

Topical corticosteroids

- *Hydrocortisone* acts locally on the ulcer to reduce inflammation and pain and to shorten healing time and is available as **muco-adhesive tablets** for use by adults and children over 12.
- A tablet is held in close proximity to the ulcer until dissolved.
- The pharmacist should explain that the tablet should not be sucked, but dissolved in contact with the ulcer.
- Corticosteroids have no effect on recurrence.

Local analgesics

- *Benzydamine mouthwash or spray* and *choline salicylate dental gel* are short acting but can be useful in very painful major ulcers.
- Numbness, tingling and stinging can occur with *benzydamine*.
- Diluting the mouthwash with the same amount of water before use can reduce stinging.
- *Benzydamine spray* is used as four sprays onto the affected area three times a day.

Local anaesthetics (e.g. lidocaine (lignocaine) and benzocaine)

- Local anaesthetic **gels** are often requested by patients.
- Although they are effective in producing temporary pain relief, maintenance of gels and liquids in contact with the ulcer surface is difficult.
- Reapplication of the preparation may be done when necessary.
- **Tablets and pastilles** can be kept in contact with the ulcer by the tongue and can be of value when just one or two ulcers are present.

Heartburn

Heartburn

- Symptoms of heartburn are caused when there is reflux of gastric contents, particularly acid, into the oesophagus, which irritate the sensitive mucosal surface (oesophagitis).
- Patients will often describe the symptoms of heartburn – typically a burning discomfort/pain felt in the stomach, passing upwards behind the breastbone (retrosternally).

Age

- The symptoms of reflux and oesophagitis occur more commonly in patients aged **over 55 years**.
- Heartburn is not a condition normally experienced in childhood, although symptoms can occur in young adults and particularly in pregnant women.
- **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).
- Deciding whether or not someone is suffering from heartburn can be helped by enquiring about precipitating or aggravating factors.
- Heartburn is often brought on by **bending or lying down**.

- It is more likely to occur in those who are **overweight** and can be aggravated by a recent increase in weight.
- It is also more likely to occur after a large meal.

- *Severe pain*

- Sometimes the pain can come on suddenly and severely and even radiate to the back and arms. In this situation differentiation of symptoms is difficult as the pain can mimic a heart attack and urgent medical referral is essential.
- Sometimes patients who have been admitted to hospital apparently suffering a heart attack are found to have oesophagitis instead.

- *dysphagia*
- Difficulty in swallowing must always be regarded as a serious symptom.
- It is possible that discomfort may be secondary to oesophagitis from acid reflux (gastrooesophageal reflux disease (GORD)), especially when it occurs whilst swallowing hot drinks or irritant fluids (e.g. alcohol or fruit juice).
- A history of a sensation that food sticks as it is swallowed or that it does not seem to pass directly into the stomach (dysphagia) is an indication for immediate **referral**.
- It may be due to obstruction of the oesophagus, for example, by a tumour.

- **Regurgitation** can be associated with difficulty in swallowing. It occurs
- when recently eaten food sticks in the oesophagus and is regurgitated without passing into the stomach.
- This is due to a mechanical blockage in the oesophagus. This can be caused by a **cancer** or, more fortunately, by less serious conditions such as a **peptic stricture**.

- *Pregnancy*

- It has been estimated that as many as half of all pregnant women suffer from heartburn.
- 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.
- Heartburn often begins in mid-to-late pregnancy, but may occur at any stage. The problem may sometimes be associated with stress.

When to refer

Failure to respond to antacids

Pain radiating to arms

Difficulty in swallowing

Regurgitation

Long duration

Increasing severity

Children

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

Management

- The symptoms of heartburn respond well to treatments that are available over the counter (OTC), and there is also a role for the pharmacist to offer practical advice about measures to prevent recurrence of the problem.

Antacids

- Antacids can be effective in controlling the symptoms of heartburn and reflux, more so in combination with an alginate.
- Preparations that are high in sodium should be avoided by anyone on a sodium-restricted diet (e.g. those with heart failure or kidney or liver problems).
- In general, liquids are more effective antacids than are solids; they are easier to take, work quicker and have a greater neutralising capacity.

- Antacids are best taken about **1 h 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.

Sodium bicarbonate

- It is water soluble, acts quickly, is an effective neutraliser of acid and has a **short duration of action**.
- It is often included in OTC formulations in order to give a fast-acting effect, in combination with longer-acting agents.
- In short-term use, it can be a valuable and effective antacid.

Aluminium and magnesium salts

- *(e.g. aluminium hydroxide and magnesium trisilicate)*
- Aluminium-based antacids are effective; they tend to be constipating and this can be a useful effect in patients if there is slight diarrhoea.
- Conversely, the use of aluminium antacids **is best avoided in anyone who is constipated** and in elderly patients who have a tendency to be so.
- **Magnesium** salts are more potent acid neutralisers than are aluminium salts.
- They tend to cause osmotic **diarrhoea** as a result of the formation of insoluble magnesium salts and are therefore useful in patients who are slightly constipated.
- Combination products containing **aluminium and magnesium** salts cause minimum bowel disturbance and are therefore valuable preparations for recommendation by the pharmacist.

Calcium carbonate

- *Calcium carbonate* is commonly included in OTC formulations.
- It acts quickly, has a prolonged action and is a potent neutraliser of acid.
- It can cause acid rebound and, if taken over long periods at high doses, can cause hypercalcaemia and so should not be recommended for long term use.
- *Calcium carbonate* and *sodium bicarbonate* can, if taken in large quantities with a high intake of milk, result in the [milk-alkali syndrome](#).
- This involves hypercalcaemia, metabolic alkalosis and renal insufficiency; its symptoms are nausea, vomiting, anorexia, headache and mental confusion.

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.

H2 antagonists (famotidine and ranitidine)

- *Famotidine* and *ranitidine* can be used for the short-term treatment of dyspepsia, hyperacidity and heartburn in adults and children over 16
- The treatment limit is intended to ensure that patients do not continuously self-medicate for long periods.
- The H2 antagonists have both a longer duration of action (up to 8–9 h) and a longer onset of action than do antacids.

- Where food is known to precipitate symptoms, the H2 antagonist should be taken an hour before food.
- H2 antagonists are also effective for prophylaxis of nocturnal heartburn.

Proton pump inhibitors

- *Omeprazole, pantoprazole and rabeprazole* can be used for the relief of heartburn symptoms associated with reflux in adults.
- PPIs are generally accepted as being amongst the most effective medicines for the relief of heartburn.
- 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.

- 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).
- *Omeprazole* and *rabeprazole* are licensed OTC as 10 mg tablets, *pantoprazole* as 20 mg tablets and their doses are shown in the table.

Strength and doses of OTC PPIs.

	Strength	Daily dose
Omeprazole	10 mg	20 mg
Pantoprazole	20 mg	20 mg
Rabeprazole	10 mg	10 mg

- Patients taking a PPI should be advised not to take H2 antagonists at the same time.
- The tablets should be swallowed whole with plenty of liquid prior to a meal.
- It is important that the tablets are not crushed or chewed.
- Alcohol and food do not affect the absorption of PPIs.

- If no relief is obtained within 2 weeks, the patient should be referred
- to the doctor.

- PPIs should not be taken during pregnancy or whilst breastfeeding.

- Drowsiness has been reported but rarely.

- Treatment with PPIs may cause a false negative result in the 'breath test' for *helicobacter*.

- *Obesity*

- If the patient is overweight, weight reduction should be advised
- There is some evidence that weight loss reduces symptoms of heartburn.

- *Food*

- Small meals, eaten frequently, are better than large meals, as reducing the amount of food in the stomach reduces gastric distension, which helps to prevent reflux.
- Gastric emptying is slowed when there is a large volume of food in the stomach; this can also aggravate symptoms.
- High-fat meals delay gastric emptying.
- The evening meal is best taken several hours before going to bed.

- *Posture*

- Bending, stooping and even slumping in an armchair can provoke symptoms and should be avoided when possible.

- *Clothing*

- Tight, constricting clothing, especially waistbands and belts, can be an aggravating factor and should be avoided.

Other aggravating factors

- Smoking
 - alcohol
 - caffeine
 - chocolate
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- have a direct effect by making the oesophageal sphincter less competent by reducing its pressure and therefore contribute to symptoms.