

Gastrointestinal Tract Problems

Constipation
Diarrhea

Constipation

- Constipation is a condition that is difficult to define and is often self diagnosed by patients.
- Generally, it is characterised by the passage of hard, dry stools less frequently than by the person's normal pattern.
- It is important for the pharmacist to find out what the patient means by constipation and to establish what (if any) change in bowel habit has occurred and over what period of time.

What you need to know

Details of bowel habit

Frequency and nature of bowel actions now

When was the last bowel movement?

What is the usual bowel habit?

When did the problem start?

Is there a previous history?

Associated symptoms

Abdominal pain/discomfort/bloating/distension

Nausea and vomiting

Blood in the stool

Diet

Any recent change in diet?

Is the usual diet rich in fibre?

Medication

Present medication

Any recent change in medication

Previous use of laxatives

Details of bowel habit

- Many people believe that a daily bowel movement is necessary for good health and laxatives are often taken and abused as a result.
- In fact, the normal range may vary from **three movements in 1 day to three in 1 week**.
- Therefore an important health education role for the pharmacist is in reassuring patients that their frequency of bowel movement is normal.

- Patients who are constipated will usually complain of **hard stools** which are difficult to pass and **less frequent than usual**.
- The determination of any change in bowel habit is essential, particularly any prolonged change.
- **A sudden change**, which has lasted for 2 weeks or longer, would be an indication for referral.

Associated symptoms

- Constipation is often associated with abdominal discomfort, bloating and nausea.
- In some cases, constipation can be so severe as to obstruct the bowel.
- This obstruction or blockage usually becomes evident by causing colicky abdominal pain, abdominal distension and vomiting.
- When symptoms suggestive of obstruction are present, urgent referral

Blood in the stool

- The presence of blood in the stool can be associated with constipation and, although alarming, is **not necessarily serious**, but does require medical referral for diagnosis.
- In such situations, blood may arise from piles (**haemorrhoids**) or a small crack in the skin on the edge of the anus (**anal fissure**).
- Both these conditions are thought to be caused by a diet low in fibre that tends to produce constipation.

Diet

- Insufficient dietary fibre is a common cause of constipation.
- Changes in diet and lifestyle, may result in constipation.
- Inadequate intake of food and fluids, for example, in someone who has been ill, may also be responsible for constipation.

- It is thought that an inadequate fluid intake is one of the commonest causes of constipation.
- Research shows that by increasing fluid intake in someone who is not well hydrated the frequency of bowel actions is increased.
- The recommended daily amount of fluid is 1.8 L for men and 1.6 L for women and not all of this need to be in the form of water.
- Tea and coffee can be counted towards daily fluid intake.

Medication

- Continuous use of laxatives , especially of stimulant laxatives, can result in a vicious circle where the contents of the gut are expelled, causing a subsequent cessation of bowel actions for 1 or 2 days.
- This then leads to the false conclusion that constipation has recurred and more laxatives are taken and so on.
- **Chronic overuse** of stimulant laxatives can result in loss of muscular activity in the bowel wall (an atonic colon) and thus further constipation.

Table 3 Drugs that may cause constipation.

| Drug group | Drug |
|------------------------------|--|
| Analgesics and opiates | <i>Dihydrocodeine, codeine</i> |
| Antacids | <i>Aluminium salts</i> |
| Anticholinergics | <i>Hyoscine</i> |
| Anticonvulsants | <i>Phenytoin</i> |
| Antidepressants | <i>Tricyclics, selective serotonin reuptake inhibitors</i> |
| Antihistamines | <i>Chlorpheniramine, promethazine</i> |
| Antihypertensives | <i>Clonidine, methyldopa</i> |
| Anti-Parkinson agents | <i>Levodopa</i> |
| Beta-blockers | <i>Propranolol</i> |
| Diuretics | <i>Bendroflumethiazide</i> |
| Iron | |
| Laxative abuse | |
| Monoamine oxidase inhibitors | |
| Antipsychotics | <i>Chlorpromazine</i> |

When to refer

Change in bowel habit of 2 weeks or longer

Presence of abdominal pain, vomiting, bloating

Blood in stools

Prescribed medication suspected of causing symptoms

Failure of OTC medication

- If 1 week's use of treatment does not produce relief of symptoms, the patient should see the doctor.
- If the pharmacist feels that it is necessary to give only dietary advice, then it would be reasonable to leave it for about 2 weeks to see if the symptoms settle.

Management

- Constipation that is not caused by serious pathology will usually respond to simple measures, which can be recommended by the pharmacist:
 - increasing the amount of dietary fibre,
 - maintaining fluid consumption and
 - doing regular exercise.
 - In the short term, a laxative may be recommended to ease the immediate problem.

Stimulant laxatives (e.g. sennosides and bisacodyl)

- Stimulant laxatives work by increasing peristalsis.
- All stimulant laxatives can produce griping/cramping pains.
- It is advisable to start at the lower end of the recommended dosage range, increasing the dose if needed.
- The intensity of the laxative effect is related to the dose taken.

- Stimulant laxatives work within 6–12 h when taken orally.
- They should be used for a **maximum of 1 week**.
- *Bisacodyl* tablets are enteric coated and should be swallowed whole because *bisacodyl* is **irritant to the stomach**.
- If it is given as a suppository, the effect usually occurs within 1 h and sometimes as soon as 15 min after insertion.
- *Docusate sodium* appears to have both stimulant and stool-softening effects and acts within 1–days.

Bulk laxatives (e.g. ispaghula, methylcellulose and sterculia)

- Bulk laxatives are those that most closely copy the **normal physiological mechanisms** involved in bowel evacuation and are considered by many to be the laxatives of choice.
- Such agents are especially useful where patients cannot or will not increase their intake of dietary fibre.
- Bulk laxatives work by **swelling in the gut** and increasing faecal mass so that peristalsis is stimulated.
- The laxative effect can take several days to develop.

- The sodium content of bulk laxatives (as *sodium bicarbonate*) should be considered in those requiring a restricted sodium intake.
- When recommending the use of a bulk laxative, the pharmacist should advise that an **increase in fluid intake would be necessary**.
- In the form of granules or powder, the preparation should be mixed with a full glass of liquid (e.g. fruit juice or water) before taking.
- Fruit juice can mask the bland taste of the preparation.
- **Intestinal obstruction** may result from inadequate fluid intake in patients taking bulk laxatives, particularly those whose gut is not functioning properly as a result of abuse of stimulant laxatives.

Osmotic laxatives (e.g. lactulose, macrogol)

- *Macrogol and lactulose* work by maintaining the volume of fluid in the bowel and may take 1–2 days to work.
- *Lactulose is a liquid medicine.*
- *Macrogol* is available as sachets of powder which are dissolved in water before use.
- *Lactitol* is chemically related to *lactulose* and is available as sachets.

- *Lactulose* and *lactitol* can cause flatulence, cramps and abdominal discomfort.
- *Glycerine suppositories* have both osmotic and irritant effects and usually act within 1 h.
- They may cause rectal discomfort. Moistening the suppository before use will make insertion easier.

Constipation in children

- Parents sometimes ask for laxatives for their children.
- Fixed ideas about regular bowel habits are often responsible for such requests.
- Numerous factors can cause constipation in children, including a change in diet and emotional causes.
- Simple advice about sufficient dietary fibre and fluid intake may be all that is needed.
- If the problem is of recent origin and there are no significant associated signs, a single *glycerine suppository* together with dietary advice may be appropriate.
- Referral to the doctor would be best if these measures are unsuccessful.

Constipation in pregnancy

- Constipation commonly occurs during pregnancy; hormonal changes are responsible.
- Dietary advice concerning the intake of plenty of high-fibre foods and fluids can help.
- Oral **iron**, often prescribed for pregnant women, may contribute to the problem.
- Stimulant laxatives are best avoided during pregnancy; **bulk-forming laxatives** are preferable,

Constipation in the elderly

- Constipation is a common problem in elderly patients for several reasons.
 - Elderly patients are less likely to be physically active;
 - they often have poor teeth and so may avoid high-fibre foods that are more difficult to chew;
 - multidrug regimens are more likely in elderly patients, who may therefore suffer from drug-induced constipation;
- If a bulk laxative is to be recommended for an elderly patient, it is of great importance that the pharmacist give advice about maintaining fluid intake to prevent the possible development of intestinal obstruction.

Laxative abuse

- Two groups of patients are likely to abuse laxatives:
 - those with chronic constipation who get into a vicious circle by using **stimulant laxatives** which eventually results in damage to the nerve plexus in the colon, and
 - those who take laxatives in the belief that they will control weight, for example, those who are dieting or, more seriously, **women with eating disorders** (anorexia nervosa or bulimia), who take very large quantities of laxatives.
- The pharmacist is in a position to monitor purchases of laxative products and counsel patients as appropriate.
- Any patient who is ingesting large amounts of laxative agents should be referred to the doctor.

Diarrhoea

Diarrhoea

- Diarrhoea is defined as an **increased frequency** of bowel evacuation, with the passage of abnormally soft or watery faeces.
- The basis of treatment is electrolyte and fluid replacement; in addition, antidiarrhoeals are useful in adults and older children.

What you need to know

Age

Infant, child, adult, elderly

Duration

Severity

Symptoms, associated symptoms

Nausea/vomiting

Fever

Abdominal cramps

Flatulence

Other family members affected?

Previous history

Recent travel abroad?

Causative factors

Medication

Medicines already tried

Other medicines being taken

Age

- Particular care is needed in the very young and the very old.
- Infants (younger than 1 year) and elderly patients are especially at risk of becoming dehydrated.

Duration

- Most cases of diarrhoea will be acute and self-limiting.
- Because of the dangers of dehydration, it would be wise to refer **infants** with diarrhea of longer than 1 day's duration to the doctor.

Severity

- The degree of severity of diarrhoea is related to the nature and frequency of stools.
- Both these aspects are important, since misunderstandings can arise, especially in self-diagnosed complaints.

Symptoms

- Acute diarrhoea is rapid in onset and produces watery stools that are passed frequently.
- Abdominal cramps, flatulence and weakness or malaise may also occur.
- Nausea and vomiting may be associated with diarrhoea, as may fever.
- The pharmacist should always ask about vomiting and fever in infants; both will increase the likelihood that severe dehydration will develop.
- Another important question to ask about diarrhoea in infants is whether the baby has been taking milk feeds and other drinks as normal. Reduced fluid intake predisposes to dehydration.

- The pharmacist should question the patient about food intake and also about whether other family members or friends are suffering from the same symptoms, since acute diarrhoea is often infective in origin.
- Often there are localised minor outbreaks of gastroenteritis, and the pharmacist may be asked several times for advice and treatment by different patients during a short period of time.
- The presence of blood or mucus in the stools is an indication for referral.
- Diarrhoea with severe vomiting or with a high fever would also require medical advice.

Previous history

- A previous history of diarrhoea or a prolonged change in bowel habit would warrant referral for further investigation and it is important that the pharmacist distinguish between acute and chronic conditions.
- Chronic diarrhoea (of more than 3 weeks' duration) may be caused by bowel conditions such as Crohn's disease, IBS or ulcerative colitis and requires medical advice.

Causes of diarrhoea

- *Infections*
- Most cases of diarrhoea are short lived, the bowel habit being normal before and after.
- In these situations, the cause is likely to be infective (viral or bacterial).

Viral

- Viruses are often responsible for **gastroenteritis**.
- In infants, the virus causing such problems often gains entry into the body via the respiratory tract (**rotavirus**).
- Associated symptoms are those of a cold and perhaps a cough.
- The infection starts abruptly and **vomiting** often precedes **diarrhoea**. The acute phase is usually over within 2–3 days, although diarrhoea may persist.
- Norovirus is another common cause of gastroenteritis in people of all ages.

Bacterial

- These are the food-borne infections previously known as **food poisoning**.
- There are several different types of bacteria that can cause such infections:
 - *Staphylococcus*,
 - *Campylobacter*,
 - *Salmonella*,
 - *Shigella*,
 - *Escherichia coli*,
 - *Bacillus cereus* and
 - *Listeria monocytogenes*.
- The typical symptoms include severe **diarrhoea** and/or **vomiting**, with or without abdominal **pain**.

- Two commonly seen infections are *Campylobacter* and *Salmonella*, which are often associated with contaminated poultry, although other meats have been implicated.
- Contaminated eggs have also been found to be a source of *Salmonella*.
- Kitchen hygiene and thorough cooking are of great importance in preventing infection.

- Antibiotics are generally unnecessary as most food-borne infections resolve spontaneously.
- The most important treatment is adequate fluid replacement.
- Antibiotics are used for *Shigella* infections and the more severe *Salmonella* or *Campylobacter* ones.
- *Ciprofloxacin* may be used in such circumstances.

Chronic diarrhoea

- Recurrent or persistent diarrhoea may be due to an
 - irritable bowel or,
 - more seriously, a bowel tumour,
 - an inflammation of the bowel
 - (e.g. ulcerative colitis or Crohn's disease),
 - an inability to digest or absorb food
 - (malabsorption, e.g. coeliac disease)
 - or diverticular disease of the colon.

Medication

- *Medicines already tried*
- The pharmacist should establish the identity of any medication that has already been taken to treat the symptoms in order to assess its appropriateness.
- *Other medicines being taken*
- Details of any other medication being taken (both OTC and prescribed) are also needed, as the diarrhoea may be drug induced
OTC

Table 5 Some drugs that may cause diarrhoea.

Antacids: *Magnesium salts*

Antibiotics

Antihypertensives: *methyldopa*; beta-blockers (rare)

Digoxin (toxic levels)

Diuretics (*furosemide*)

Iron preparations

Laxatives

Misoprostol

Non-steroidal anti-inflammatory drugs

Selective serotonin reuptake inhibitors

When to refer

Diarrhoea of greater than

1 day's duration in children younger than 1 year

2 days' duration in children under 3 years and elderly patients

3 days' duration in older children and adults

Association with severe vomiting and fever

Recent travel abroad

Suspected drug-induced reaction to prescribed medicine

History of change in bowel habit

Presence of blood or mucus in the stools

Pregnancy

Management

- **Oral rehydration therapy**
- The risk of dehydration from diarrhoea is greatest in babies, and rehydration therapy is considered to be the **standard treatment for acute diarrhoea** in **babies and young** children.
- Oral rehydration sachets may be used with antidiarrhoeals in older children and adults.
- Rehydration may still be initiated even if referral to the doctor is advised.

- Patients should be reminded that only water should be used to make the solution (never fruit or fizzy drinks) and that **boiled and cooled water** should be used for children younger than 1 year.
- The solution can be kept for 24 h if stored in a refrigerator.
- Fizzy, sugary drinks **should never be used** to make rehydration fluids, as they will produce a hyperosmolar solution that may exacerbate the problem.

- **Home-made** salt and sugar solutions **should not be recommended**, since the accuracy of electrolyte content cannot be guaranteed, and this accuracy is essential, especially in infants, young children and elderly patients.
- *Quantities*
- Parents sometimes ask how much rehydration fluid should be given
- to children. The following simple rules can be used for guidance; the
- amount of solution offered to the patient is based on the number of
- watery stools that are passed.

Table 6 Amount of rehydration solution to be offered to patients.

| Age | Quantity of solution (per watery stool) |
|--------------|---|
| Under 1 year | 50 mL (quarter of a glass) |
| 1–5 years | 100 mL (half a glass) |
| 6–12 years | 200 mL (one glass) |
| Adult | 400 mL (two glasses) |

Loperamide

- *Loperamide* is an effective antidiarrhoeal treatment for use in older children and adults.
- When recommending *loperamide* the pharmacist should remind patients to drink plenty of extra fluids.
- Oral rehydration sachets may be recommended.
- *Loperamide* may not be recommended for use in children under 12 years.

Diphenoxylate/atropine (Co-phenotrope)

- Co-phenotrope can be used as an adjunct to rehydration to treat diarrhea in those aged 16 years and over.

Kaolin

- *Kaolin* has been used as a traditional remedy for diarrhoea for many years.
- Its use was justified on the theoretical grounds that it would absorb water in the GI tract and would absorb toxins and bacteria onto its surface, thus removing them from the gut.
- The latter has not been shown to be true and the usefulness of the former is questionable.
- The use of *kaolin*-based preparations has largely been superseded by oral rehydration therapy, although patients continue to ask for various products containing *kaolin*.