Gastrointestinal Tract Problems I

Constipation

Constipation is a condition 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 change in bowel habit has occurred and over what period of time.

Patient Assessment

A- 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. A sudden change, which has lasted for 2 weeks or longer (with no identifiable cause), would be an indication for referral.

B- Associated symptoms

1. Mild cases of constipation are often associated with abdominal discomfort, bloating and nausea.
2. 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 is necessary as hospital admission is the usual course of action.
3. Blood in the stool, the presence of blood in the stool can be associated with constipation and, although alarming, is not necessarily serious. 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 fiber that tends to produce constipation. Medical referral is advisable as there are other more serious causes of bloody stools, especially where the blood is mixed in with the motion.

C- Bowel cancer

Large bowel cancer may also present with a persisting change in bowel habit. The incidence of large bowel cancer rises significantly with age. It is uncommon among people under 50 years. The average age at diagnosis is 60–65 years.

D- Diet and lifestyle

Insufficient dietary fiber is a common cause of constipation. An impression of the fiber content of the diet can be gained by asking what would normally be eaten during a day, looking particularly for the presence of wholemeal cereals, bread, fresh fruit and vegetables. Changes in diet and lifestyle, e.g. following a job change, loss of work, retirement or travel, may result in constipation. An inadequate intake of food and fluids, e.g. in someone who has been ill, may be responsible. An adequate fluid intake is essential for well-being, and, for both prevention and treatment of constipation. It is thought that an inadequate fluid intake is one of the commonest causes of constipation.

E- Medication

1. One or more laxatives may have already been taken in an attempt to treat the symptoms. Failure of such medication may indicate that referral to the doctor is the best option. Previous history of the use of laxatives is relevant. Continuous use, 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.
2. Many drugs can induce constipation; some examples are listed in the following table:

Examples of drugs that may cause constipation
Analgesics and opiates (Dihydrocodeine, codeine), **Antacids** (Aluminium salts), **Anticholinergics** (Hyoscine), **Anticonvulsants** (Phenytoin), **Antidepressants** (Tricyclics, selective serotonin reuptake inhibitors) **Antihistamines** (Chlorpheniramine, promethazine), **Antihypertensives** (Clonidine, methyldopa), **Anti-Parkinson** agents (Levodopa), **Beta-blockers** (Propranolol), **Diuretics** (Bendroflumethiazide), **Iron**, **Laxative abuse , Antipsychotics** (Chlorpromazine)

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

Treatment timescale

A-If the pharmacist gives non-pharmacologic advice only, then the treatment timescale is 2 weeks.

B-If the pharmacist gives laxative drug, then the treatment timescale is 1week only.

Management

A-Non-pharmacologic advices:

1. Increasing the amount of dietary fiber,
2. Maintaining fluid consumption,
3. Doing regular exercise.

An adequate fluid intake is essential for well-being, and, for both prevention and treatment of 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. It is particularly effective when it is increased alongside an increase in dietary fiber. The recommended daily amount of fluid is 2.5 litres a day for adults and not all of this needs to be in the form of water. Tea and coffee can be counted towards daily fluid intake.

B-Laxatives:

1- Laxatives can be classified into groups depending on their mode of action

Type of laxative	Example(s)	Approximate onset of action
1-Stimulant laxative	Senna, Bisacodyl, Sodium picosulfate, and Glycerin (supp.)	Oral:6-12 hours Rectal: within 1 hour
2-Bulk-forming laxative	Methylcellulose, Bran , Sterculia and Ispaghula (Metamucil®)	12 -24 hours, but onset may be delayed as long as 72 hours
3-Lubricant (faecal softeners)	Liquid paraffin	6-8 hours
4-Osmotic laxative	Lactulose	1-2 days

2- The drug selection should be based on: Patients characteristics (age, pregnancy…), patient preference, how quickly an effect is needed, side effects, and cost.

Where constipation is not induced by necessary drug therapy or chronic illness, the laxative should be used for a short time until dietary and lifestyle changes become effective

Patient	Preferred laxative
Pregnant women	Bulk-forming laxative. Lactulose may be used
Breast-feeding mother	Bulk-forming laxative, Lactulose
Children	Glycerin (supp.), Lactulose
Advanced age (elderly)	Bulk-forming laxative, Also Lactulose and Glycerin (supp.) are safe

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1. **Stimulant laxatives**

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.

Bisacodyl tablets are enteric coated and should be swallowed whole because *bisacodyl* is irritant to the stomach.

The use of *senna* pods and *cascara*, which is non-standardised, should be discouraged because the dose and therefore action are unpredictable. Castor oil is a traditional remedy for constipation, which is no longer recommended since there are better preparations available.

Glycerin 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.

2. Bulk laxatives

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. 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.

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. Otherwise the patient will be at risk of Intestinal obstruction.

Bulk laxatives should not be taken immediately before going to bed, because there may be a risk of oesophageal blockage if the patient lies down directly after taking them.

3. **Osmotic laxatives**

Lactulose works by maintaining the volume of fluid in the bowel. It may take 1–2 days to work. *Lactitol* is chemically related to *lactulose* and is available as sachets. The contents of the sachet are sprinkled on food or taken with liquid. One or two glasses of fluid should be taken with the daily dose. *Lactulose* and *lactitol* can cause flatulence, cramps and abdominal discomfort.

Constipation in special population groups:

A- 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 *glycerin suppository* together with dietary advice may be appropriate. Referral to the doctor would be best if these measures are unsuccessful.

B- Constipation in pregnancy

Constipation commonly occurs during pregnancy; hormonal changes are responsible and it has been estimated that one in three pregnant women suffers from constipation. 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, although they may cause some abdominal discomfort to women when used late in pregnancy.

C- 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 natural teeth or false 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; fixed ideas about what constitutes a normal bowel habit are common in older patients. 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, e.g. 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 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.

Patient Assessment

A- 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.

B- 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.

C- Severity

The degree of severity of diarrhoea is related to the nature and frequency of stools. Severe diarrhea (passing 6 or more unformed stool in 24 hours) required referral.

D- 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. 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.

E- Recent travel abroad

Diarrhoea in a patient who has recently travelled abroad requires referral since it might be infective in origin.

F- Causes of Acute Diarrhoea

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 oftenprecedes diarrhoea. The acute phase is usually over within 2–3 days, although diarrhoea may persist.

Whilst in the majority the infection is usually not too severe and is self-limiting, it should be remembered that rotavirus infection can cause death. This is most likely in those infants already malnourished and living in poor social circumstances who have not been breastfed.

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*, pathogenic *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.

Protozoan

Examples include Entamoeba histolytica (amoebic dysentery) and Giardia lamblia (giardiasis).

Causes of 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.

G- 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.

Some drugs that may cause diarrhea:

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

Symptoms of dehydrations in children and adults	
Children	**adults**
Dry mouth, tongue and skin Fewer or no tears when crying Decreased urination (less than 4 wet diapers in 24 hours) Sunken eye, cheeks or abdomen Sunken fontanel Decreased skin turgor Irritability or listlessness	Increased thirst Decreased urination Feeling weak or lightheaded Dry mouth/ tongue

Treatment timescale
One day in children; otherwise 2 days.

Management

1- 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. Sachets of powder for reconstitution are available; these contain sodium as chloride and bicarbonate, glucose and potassium. The absorption of sodium is facilitated in the presence of glucose. It is essential that appropriate advice be given by the pharmacist about how the powder should be reconstituted.

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)

2- Antimotility Drugs

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.

3- Adsorbents

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 use of *kaolin*-based preparations has largely been superseded by oral rehydration therapy.

Morphine

Morphine, in various forms, has been included in antidiarrhoeal remedies for many years. The theoretical basis for its inclusion is that *morphine*, together with other narcotic drugs such as *codeine*, is known to slow the action of the GI tract; indeed, constipation is a well recognised side-effect of such drugs. However, at the doses included in most OTC preparations, it is unlikely that such an effect would be produced. *Kaolin* and *morphine* mixture remains a popular choice for some patients, despite the lack of evidence of its effectiveness.

Hemorrhoids

Hemorrhoids (also known as piles): are abnormally dilated, swollen, bulging of hemorrhoidal vessels and the overlying skin in the anorectal region.

Etiology

The cause of hemorrhoid is probably multifactorial with anatomical (degeneration of elastic tissue), physiological (increased anal canal pressure), and mechanical (straining at defecation) processes implicated. In addition hemorrhoid is often exacerbated by inadequate dietary fiber or fluid intake. Pregnancy is believed to precipitate hemorrhoids in susceptible women.

Types of hemorrhoids

Superior to the anal sphincter there is an area known as the dentate line. Hemorrhoids above the dentate line are classified as internal, while hemorrhoids below the dentate line are classified as external. The term mixed hemorrhoids is used when internal and external hemorrhoids coexist.

Internal haemorrhoids are graded according to severity: grade I, do not prolapse out of the anal canal; grade II, prolapse on defecation but reduce spontaneously; grade III, require manual reduction; and grade IV, cannot be reduced.

Patient Assessment (Specific questions to ask)

A- Duration and previous history

It would be useful to establish whether the patient has a previous history of haemorrhoids and if the doctor has been seen about the problem. Patient with symptoms that have been constantly present for more than 3 weeks required referral for further investigations.

B- Associated symptoms:

Pain

Pain is not always present. Pain associated with hemorrhoids tend to occurs on defecation and at other time for example when sitting. It is usually described as a dull ache. Sharp or stabbing pain at the time of defecation can suggest an anal fissure and required referral.

Itching

The most troublesome symptom for many patients is itching and irritation of the perianal area rather than pain.

Bleeding

1-Bright blood does not normally have a viciou significance, but patients experiencing this for the first time should be referred.
2-Blood mixed in the stools, giving them a tarry red or black appearance. This indicates bleeding within the gastrointestinal system and must be investigated.
3-Large volumes of blood not associated with defecation; this may indicate carcinoma and must be investigated (patient with hemorrhoids does not usually bleed at time other than defecation).

Constipation

Constipation is a common causatory or exacerbatory factor in hemorrhoids. In addition if piles are painful, patient try to avoid defecation which makes the constipation worse.
Associated symptoms
Symptoms of hemorrhoids are usually local (pain, itching…). Other symptoms such as abdominal pain, vomiting, loss of appetite, tenesmus (desire to defecate when there is no stool), seepage (involuntary passage of fecal material) required referral.

C- Medication

You need to know:
1- Products already used to treat hemorrhoids.
2- Drug-induced constipation which exacerbate the condition.

When to refer

Duration of longer than 3 weeks
Presence of blood in the stools
Change in bowel habit (persisting alteration from normal bowel habit)
Suspected drug-induced constipation
Associated abdominal pain/vomiting

Treatment timescale

If symptoms have not improved after 1 week, patients should see their Doctor

Management

A- Non-pharmacological advices:

1. Increase the amount of fiber and fluid in the diet.
2. Avoid lifting heavy object.
3. Avoid delaying the urge to defecate.

4. Avoid prolonged sitting in the toilet to reduce straining and pressure on the hemorrhoids vessels.
5. Wash the perianal area with warm water after each bowel movement. In addition many patients find that warm bath soothes their discomfort.

B- Pharmacological therapy:

1-The OTC products for hemorrhoids include the followings (alone or in combined products):

Type	Example(s)	Purpose (and mechanism)
Anesthetics	**Lidocaine, benzocaine**	**Reduce pain and itching**
Astringents	**Bismuth, zinc**	**Precipitate the surface protein producing coat over hemorrhoids to reduce itching, irritation,..**
Anti-inflammatory	**Hydrocortisone (the only OTC)**	**Reduce inflammation and swelling to relief Pain and itching.**
Protectants	**Zinc oxide, AL-hydroxide, calamine, shark liver oil**	**Form a barrier on skin to prevent irritation, itching, and loss of moisture.**
Antiseptics	**resorcinol**	**Antiseptic.**
Counter-irritants	**menthol**	**Give tingling sensation to overcome pain and itching.**
Vasoconstrictor	**Phenylphrine, ephedrine…**	**Reduce swelling to relief pain and itching.**

2-Laxatives

The short-term use of a laxative to relieve constipation might be considered. A stimulant laxative (e.g. senna) could be supplied for 1 or 2 days to help deal with the immediate problem while dietary fiber and fluids are being increased. For patients who cannot or choose not to adapt their diet, bulk laxatives may be used long term.

How to use OTC products

1-Ointments and creams can be used for internal and external hemorrhoids while suppositories are used for internal hemorrhoids. However both are used twice daily (morning and evening) and after each bowel movement.

2-Many people prefer suppositories, but these products are often not effective because they tend to slip into the rectum and melt, thus bypass the anal canal where the medication is needed. In general Ointments and creams are preferred over suppositories.

3-When used intrarectally, the ointment may be inserted using an applicator or finger but the applicator is preferred because it can reach an area where the finger cannot reach. The applicator should be lubricated by the ointment before insertion.

4-Products that contain hydrocortisone are restricted to those aged above 18 years and for no longer than of 7 days of continuous treatment.

References:

1. Symptoms in the Pharmacy 8th Edition, 2018.
2. Community Pharmacy a guide to management of minor ailments 1st Edition, 2018.