

# Constipation

BY

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# Constipation

- Constipation, like diarrhoea, means different things to different people.
- Constipation arises when the patient experiences a reduction in their normal bowel habit accompanied with more difficult defecation and/or hard stools.
- In Western populations 90% of people defecate between three times a day and once every three days. However, many people still believe that anything other than one bowel movement a day is abnormal

# Prevalence and epidemiology

- Constipation is very common.
- It occurs in all age groups but is especially common in the elderly.
- It has been estimated that 25 to 40% of all people over the age of 65 have constipation.
- The majority of the elderly have normal frequency of bowel movements but strain at stool. This is probably a result of sedentary lifestyle, a decreased fluid intake, poor nutrition, avoidance of fibrous foods and chronic illness.
- Women are two to three times more likely to suffer from constipation than men and 40% of women in late pregnancy experience constipation.

# Aetiology

- The normal function of the large intestine is to remove water and various salts from the colon, drying and expulsion of the faeces.
- Any process that facilitates water resorption will generally lead to constipation.
- The commonest cause of constipation is an increase in intestinal tract transit time of food which allows greater water resorption from the large bowel leading to harder stools that are more difficult to pass.
- This is most frequently caused by a deficiency in dietary fibre, a change in lifestyle and/or environment and medication.
- Occasionally, patients ignore the defecatory reflex as it maybe inconvenient for them to defecate.

# Arriving at a differential diagnosis

- The first thing a pharmacist should do is to establish the patient's current bowel habit compared to normal.
- This should establish if the patient is suffering from constipation.
- Questioning should then concentrate on determining the cause because constipation is a symptom and not a disease and can be caused by many different conditions.

- Constipation does not usually have sinister pathology and the commonest cause in the vast majority of non-elderly adults will be a lack of dietary fibre .
- However, constipation can be caused by medication and many disease states including neurological disorders (e.g. multiple sclerosis, Parkinson's disease), metabolic and endocrine conditions (diabetes, hypothyroidism) and neoplasm.
- A number of constipation-specific questions should always be asked of the patient to aid in diagnosis

# Specific questions to ask the patient:

## Constipation

1. Change of diet or routine
  - Constipation usually has a social or behavioural cause.
  - There will usually be some event that has precipitated the onset of symptoms

# Pain on defecation

- Associated pain when going to the toilet is usually due to a local anorectal problem.
- Constipation is often secondary to the suppression of defecation because it induces pain.
- These cases are best referred for physical examination



# Presence of blood

- Bright red specks in the toilet or smears on toilet tissue suggest haemorrhoids or a tear in the anal canal (fissure).
- However, if blood is mixed in the stool (melaena) then referral is necessary.
- A stool that appears black and tarry is suggestive of an upper GI bleed

# Duration (chronic or recent?)

- Constipation lasting 6 weeks or more is said to be chronic.
- If a patient suffers from longstanding constipation then treatment could be given.
- However, cases of more than 14 days with no identifiable cause should be referred

# Lifestyle changes

- Changes in job or marital status can precipitate depressive illness that can manifest with physiological symptoms such as constipation

# Causes of constipation and their relative incidence in community pharmacy

- Most likely : Eating habits/lifestyle
- Likely : Medication
- Unlikely : Irritable bowel syndrome, pregnancy, depression, functional disorders (children)
- Very unlikely : Colorectal cancer, hypothyroidism

# Likely causes: Medicine-induced

- constipation Many medicines are known to cause constipation.
- Most exert their action by decreasing gut motility, although opioids tend to raise sphincter tone and reduce sensitivity to rectal distension.
- A detailed medication history should always be sought from the patient .

# Examples of medicines known to cause constipation

- $\alpha$ -blocker : Prazosin
- Antacid Aluminium and calcium salts
- Anticholinergic Trihexyphenidyl, hyoscine, oxybutynin, procyclidine, tolterodine
- Antidepressant Tricyclics, SSRIs, reboxetine, venlafaxine, duloxetine, mirtazapine

- Anti-emetic Palonosetron, dolasetron, aprepitant
- Anti-epileptic Carbamazepine, oxcarbazepine
- Antipsychotic Phenothiazines, haloperidol, pimozide and atypical antipsychotics such as amisulpride, aripiprazole, olanzapine, quetiapine, risperidone, zotepine, clozapine
- Antiviral Foscarnet

- Beta-blocker Oxprenolol, bisoprolol, nebivolol; other  $\beta$ -blockers tend to cause constipation
- more rarely Bisphosphonate Alendronic acid
- CNS stimulant Atomoxetine
- Calcium channel blocker Diltiazem, verapamil
- Cytotoxic Bortezomib, buserelin, cladribine, docetaxel, doxorubicin, exemestane, gemcitabine, irinotecan, mitoxantrone, pentostatin, temozolomide, topotecan, vinblastine, vincristine, vindesine, vinorelbine



- Dopaminergic Amantadine, bromocriptine, cabergoline, entacapone, tolcapone, levodopa, pergolide, pramipexole, quinagolide
- Growth hormone antagonist Pegvisomant
- Immunosuppressant Basiliximab, mycophenolate, tacrolimus
- Lipid-lowering agent Cholestyramine, colestipol, rosuvastatin, atorvastatin (other statins uncommon), gemfibrozil
- Iron Ferrous sulphate
- Metabolic disorders Miglustat

- Muscle relaxant Baclofen
- NSAID Meloxicam; other NSAIDs, e.g. aceclofenac, and COX-2 inhibitors reported as uncommon
- Smoking cessation Bupropion
- Opioid analgesic All opioid analgesics and derivatives
- Ulcer healing All proton pump inhibitors, sucralfate

# Unlikely causes

- 1. Irritable bowel syndrome Patients younger than 45 with lower abdominal pain and a history of alternating diarrhoea and constipation are likely to have IBS.

## 2. Pregnancy

- Constipation is common in pregnancy, especially in the third trimester.
- A combination of increased circulating progesterone, displacement of the uterus against the colon by the fetus, decreased mobility and iron supplementation all contribute to an increased incidence of constipation whilst pregnant.
- Most patients complain of hard stools rather than a decrease in bowel movements. If a laxative is used a bulk-forming laxative should be recommended.

# 3. Depression

- Upwards of 20% of the population will suffer from depression at sometime.
- Many will present with physical as well as emotional symptoms.
- It has been reported that a third of all patients suffering from depression present with gastrointestinal complaints in a primary care setting.
- Core symptoms of persistent low mood and loss of interest in most activities should trigger referral.

- Functional causes in children
- Constipation in children is common and the cause can be varied. Constipation is not normally a result of organic disease but stems from poor diet or a traumatic experience associated with defecation, for example, unwillingness to defecate due to association of prior pain on defecation.

# Very unlikely causes

- 1. Colorectal cancer
- Colorectal carcinomas are rare in patients under the age of 40. However, the incidence of carcinoma increases with increasing age and any patient over the age of 40 presenting for the first time with a marked change in bowel habit should be referred.

- Sexes appear to be equally affected. The patient might complain of abdominal pain, rectal bleeding and tenesmus. Weight loss – a classical textbook sign of colon cancer – is common but observed only in the latter stages of the disease.
- Therefore a patient is unlikely to have noticed marked weight loss when visiting a pharmacy early in disease progression.



## 2. Hypothyroidism

- The signs and symptoms of hypothyroidism are often subtle and insidious in onset.
- Patients might experience weight gain, lethargy, cold intolerance, coarse hair and dry skin as well as constipation.
- Hypothyroidism affects ten times more women than men and peak incidence is in the fifth or sixth decade.
- Constipation is often less pronounced than lethargy and cold intolerance.

# Laxatives

- Bulk forming
- Emollient
- Hyperosmotic
- Saline
- Stimulant

# Laxatives: Mechanism of Action

## Bulk forming

- High fiber
- Absorbs water to increase bulk
- Distends bowel to initiate reflex bowel activity
- Examples:
  - Psyllium
  - Methylcellulose
  - Polycarbophil

# Laxatives:

## Mechanism of Action cont...

### Emollient

- Stool softeners and lubricants
- Promote more water and fat in the stools
- Lubricate the fecal material and intestinal walls
- Examples:
  - Stool softeners: docusate salts
  - Lubricants: mineral oil

# Lubricant laxative

- Lubricant laxative is liquid petrolatum(liquid paraffin) or certain digestible plant oils e.g. olive or castor oils.
- It is used when it is required to maintain the softness of the stool to avoid straining.
- The oil covers the stool preventing colonic absorption of water from the stool.
- The best way to administrate lubricant laxative is in emulsion form.
- **The long term use of lubricant laxative affect the absorption of vitamin A and D.**
- Because the adverse side-effect profile of liquid paraffin now means it should never be recommended because other, safer and more effective medications are available

# Laxatives:

## Mechanism of Action cont...

### Hyperosmotic

- These act by retaining fluid in the bowel by osmosis or by changing the pattern of water distribution in the faeces.
- Result: bowel distention, increased peristalsis, and evacuation, They can be taken by all patient groups, have no drug interactions and safely used in pregnancy and breastfeeding.
- Examples:
  - polyethylene glycol
  - sorbitol (increases fluid movement into intestine)
  - glycerin
  - lactulose

# Laxatives:

## Mechanism of Action cont...

### Saline

- Increase osmotic pressure within the intestinal tract causing more water to enter the intestines
- Result: bowel distention, increased peristalsis and evacuation

# Laxatives:

## Mechanism of Action cont...

- Saline laxative examples:
  - magnesium sulfate
  - magnesium hydroxide
  - magnesium citrate
  - sodium phosphate (enemax enema)



# Laxatives:

## Mechanism of Action cont...

### Stimulant

- Increases peristalsis via intestinal nerve stimulation
- Examples:
  - castor oil
  - senna (Sennalax)
  - cascara
  - diphenylmethane laxative (bisacodyl and phenolphthalein)
  - Sodium picosulfate

# stimulant laxative

- Stimulant laxatives increase GI motility by directly stimulating colonic nerves.
- It is this action that, presumably, causes abdominal pain and is the main side effect associated with stimulant laxatives.
- stimulant laxatives are associated with the possibility of nerve damage in long-term use and are the most commonly abused laxatives.
- Their onset in action is quicker than other laxative classes, with patients experiencing a bowel movement in 6 to 12 hours when taken orally.
- They are **contraindicated in abdominal pain, nausea and vomiting as those are symptom of appendicitis.**
- Bisacodyl, recommended for cleaning the colon before surgery.

# Laxatives: Side Effects

- Bulk forming
  - Impaction
  - Fluid overload
- Emollient
  - Skin rashes
  - Decreased absorption of vitamins
- Hyperosmotic
  - Abdominal bloating (swelling)
  - Rectal irritation

# Laxatives: Side Effects cont...

- Saline
  - Magnesium toxicity (with renal insufficiency)
  - Cramping
  - Diarrhea
  - Increased thirst
- Stimulant
  - Nutrient malabsorption
  - Skin rashes
  - Gastric irritation
  - Rectal irritation

# Laxatives: Side Effects cont...

All laxatives can cause electrolyte imbalances!

# Laxatives hints

- Obtain a thorough history of presenting symptoms, elimination patterns and allergies
- Assess fluid and electrolytes before initiating therapy
- Patients should not take a laxative or cathartic if they are experiencing nausea, vomiting and/or abdominal pain

# Laxatives

- A healthy, **high-fiber diet and increased fluid intake** should be encouraged as an alternative to laxative use.
- **Long-term use** of laxatives often results in **decreased bowel tone and may lead to dependency.**
- All laxative tablets should be swallowed whole, **not crushed or chewed**, especially if enteric coated.
- Sachets containing Ispaghula husk Once the granules have been mixed with water the drink should be taken as soon as the effervescence subsides because the drink 'sets' and becomes undrinkable .

- Prolonged use of lactulose In children this can contribute to the development of dental caries.,Patients should be instructed to pay careful attention to dental hygiene Lactulose taste and The sweet taste is unpalatable to many patients, especially if high doses .
- Bisacodyl tablets are enteric coated and therefore patients should be told to avoid taking antacids and milk at the same time because the coating can be broken down leading to dyspepsia and gastric irritation



- Onset of action Stimulants are the quickest acting laxative, usually within 6 to 12 hours.
- Lactulose and bulk forming laxatives may take 48 to 72 hours before an effect is seen.
- Stool softeners are the slowest in onset, taking up to three days or more to work.
- laxative to use in pregnancy? Fibre supplementation and bulk-forming agents are considered to be safe and should therefore be first-line treatments wherever possible.
- Avoid drinks of laxatives with caffeine These can act as a diuretic and serve to make constipation worse .

# Laxatives

- Patients should take all laxative tablets with 180 to 240 ml of water ,bulk-forming *laxatives with at least 240 ml (8 ounces) of water.*
- Combining laxatives There is little evidence on the beneficial effect of combining different classes of laxatives. However, in refractory cases this approach might be justifiable.
- Monitor for therapeutic effect.

# Enemas

- Is a method of administration of laxative mostly used to prepare patient for surgery and children delivery.
- Any laxative can be used but sodium phosphate and biphosphate (saline laxative) are the most used.
- Enema clears only the distal colon.

# Enema

## Give your intestines a bath!

Due to wrong food habits, most of us are carrying many kilograms of undigested waste sticking to the walls of our intestines. One of the best ways to get rid of this waste is through an enema! Enema is a safe and easy way to clean your intestines. Once the intestines are cleared, diseases are automatically cured, because no disease can survive in a body that is clean internally.

## How to take Enema?



- ① Assemble the enema pot by inserting the pipe into the pot, as shown in the photo above. The best place to take enema is the bathroom.



- ② Wash out the enema pot a couple of times and then pour 300-500 ml of clean lukewarm water in your enema pot.



- ③ Lubricate the tip of the pipe with natural coconut or olive oil.



- ④ Place the enema pot on a high shelf - it needs to be higher than your butt.



- ⑤ Kneel down on the floor. Bend down with your butt in the air and head on the ground. Insert the pipe in your rectum about 2 inches. Hold the tip of the pipe with one hand so it doesn't fall out. Use the clamp to control the intensity of the water flow. Let the water completely empty inside your intestines.



- ⑥ Then, pull out the pipe and hold the water inside your intestines for 5-10 minutes. Walk while massaging your stomach clockwise, and then anticlockwise. The encrusted filth will start leaving its place. When you feel the pressure go the bathroom, go sit on the toilet and relax. You will be so surprised to see how full of waste your intestines were.

# Suppositories

- Bisacodyl, senna, carbon dioxide or glycerine suppositories are used as laxative to clean the distal colon.
- In some cases suppository may replace enema but still not as effective as enema.

# Laxative abuse

- Excessive use may result in diarrhoea, vomiting and may cause electrolyte loss.
- Laxative should never be used on a regular basis and should be considered as a temporary treatment not to affect the normal GIT movement.
- Once regularity has returned laxative should be discontinued.