laxatives

Hawler medical university
Collage of pharmacy/ fourth stage /pharmacy practice
Sham A. Talat Shareef
(B.Sc . Msc . clinical pharmacy)
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Sham_talat@yahoo.com
Head of Department Of Clinical Pharmacy in DOH
Objectives

- Brand name
- Generic name
- Primary indication, drug classes
- Dosage forms
- Patient counseling information
- Important side effects and contraindications
What are laxatives?
What are laxatives?

- Laxatives are medicines that induce bowel movements or soften or loosen up the stool.
- They may also be called cathartics or purgatives.
- They are used to treat constipation or to empty the bowel of fecal matter before colonoscopy or surgery.
Before prescribing laxatives it is important to be sure that the patient is constipated and that the constipation is not secondary to an underlying undiagnosed complaint.

Some people tend to consider themselves constipated if they do not have a bowel movement each day.

A useful definition of constipation is the passage of hard stools less frequently than the patient’s own normal pattern and this can be explained to the patient.
Misconceptions about bowel habits have led to excessive laxative use. Abuse may lead to hypokalaemia. Thus, laxatives should generally be avoided except

- Where straining will exacerbate a condition (such as angina)
- Increase the risk of rectal bleeding as in haemorrhoids.
- Laxatives are also of value in drug-induced constipation
- For the expulsion of parasites after anthelmintic treatment
- To clear the alimentary tract before surgery and radiological procedures.
- Also the prevention of opioid-induced constipation in palliative care.
Classification of laxatives according to mechanism of action

- (stimulants): stimulating the bowel
- (stool softeners): softening the stool
- (bulking agents): increasing the stool bulk or encouraging the stool to draw in more water
- (lubricants): lubricating the stool to allow and easier passage out of the colon
- (hyperosmotics): by promoting the influx of water into the bowel
**Bulk-forming laxatives**

- Bulk-forming laxatives are of value if the diet is deficient in fiber.

- Bulk-forming laxatives are of particular value in those with small hard stools, but should not be required unless fiber cannot be increased in the diet.

- A balanced diet, including adequate fluid intake and fiber is of value in preventing constipation.
Indications of bulk-forming laxatives

1. Colostomy
2. ileostomy
3. Hemorrhoids
4. anal fissure
5. chronic diarrhoea associated with diverticular disease
6. irritable bowel syndrome, and as adjuncts in ulcerative colitis.
Patient concealing

- Adequate fluid intake must be maintained to avoid intestinal obstruction.
- Unprocessed wheat bran, taken with food or fruit juice, is a most effective bulk-forming preparation.
- Finely ground bran, though more palatable, has poorer water-retaining properties, but can be taken as bran bread or biscuits in appropriately increased quantities.
- Oat bran is also used.
- Methylcellulose, ispaghula husk, are useful in patients who cannot tolerate bran.
- Methylcellulose also acts as a faecal softener.
Ispaghula husk

INDICATIONS: Constipation

Brand name: ISPAGEL® ORANGE, FYBOGEL

contraindication:
- Colonic atony
- difficulty in swallowing .
- faecal impaction
- intestinal obstruction

CAUTIONS:
Adequate fluid intake should be maintained to avoid intestinal obstruction . It may be necessary to supervise elderly or debilitated patients or those with intestinal narrowing or decreased motility to ensure adequate fluid intake.
Ispaghula husk

- **SIDE-EFFECTS:**
  - Abdominal distension (especially during the first few days of treatment).
  - Flatulence (especially during the first few days of treatment).
  - Gastro-intestinal impaction.
  - Gastro-intestinal obstruction.
  - Hypersensitivity.
PATIENT AND CARER ADVICE

- the full effect may take some days to develop.
- Preparations that swell in contact with liquid
- should always be carefully swallowed with water and should not be taken immediately before going to bed
Dosage forms

Ispagel® Orange and Fybogel® effervescent granules are. Flavours of soluble granules formulations may include plain, lemon, or orange

- Granules
- Effervescent granules
- Powder
Methylcellulose

**Drug Action:** Bulk-forming laxatives relieve constipation by increasing faecal mass which stimulates peristalsis.

**INDICATIONS**
- Constipation / Diarrhoea

**Dosage Forms**
- by mouth using tablets

**CONTRA-INDICATIONS**
- Colonic atony.
- Difficulty in swallowing.
- Faecal impaction.
- Infective bowel disease.
- Intestinal obstruction.
• **CAUTIONS** Adequate fluid intake should be maintained to avoid intestinal obstruction.
• It may be necessary to supervise elderly or debilitated patients or those with intestinal narrowing or decreased motility to ensure adequate fluid intake.

**SIDE-EFFECTS:**
• Abdominal distension (especially during the first few days of treatment).
• Flatulence (especially during the first few days of treatment).
• Gastro-intestinal impaction.
• Gastro-intestinal obstruction.
• Hypersensitivity
PATIENT AND CARER ADVICE

• the full effect may take some days to develop.
• Preparations that swell in contact with liquid should always be carefully swallowed with water and should not be taken immediately before going to bed.
• dose should be taken with at least 300 mL liquid.
• In diarrhoea, ileostomy, and colostomy control, avoid liquid intake for 30 minutes before and after dose.
Stimulant laxatives

1. bisacodyl sodium
2. picosulfate
3. senna
4. co-danthramer and co-danthrusate. co-danthrusate are limited by its potential carcinogenicity (based on rodent carcinogenicity studies)
5. Powerful stimulants such as cascara (an anthraquinone)
6. castor oil.
7. Docusate sodium probably acts both as a stimulant and as a softening agent.
Stimulant laxatives

Stimulant laxatives increase intestinal motility and often cause abdominal cramp; they should be avoided in intestinal obstruction.

Excessive use of stimulant laxatives can cause diarrhoea and related effects such as hypokalaemia.
Senna

Indications: Constipation

• UNLICENSED USE: Tablets not licensed for use in children under 6 years. Syrup not licensed for use in children under 2 years.

• CONTRA-INDICATIONS: Intestinal obstruction

• CAUTIONS: Excessive use of stimulant laxatives can cause diarrhoea and related effects such as hypokalaemia
senna

- **SIDE-EFFECTS**: Abdominal cramp
- **PREGNANCY**: May be suitable for constipation in pregnancy if a stimulant effect is necessary.
- **BREAST FEEDING**: Not known to be harmful.
- **MEDICINAL FORMS**: tablats, oral solution
Bisacodyl

INDICATIONS:
- Constipation
- Bowel clear

CONTRA-INDICATIONS:
- Acute abdominal conditions (in children).
- Acute inflammatory bowel disease.
- Acute surgical abdominal conditions (in adults).
- Intestinal obstruction.
- Severe dehydration

CAUTIONS:
Excessive use of stimulant laxatives can cause diarrhoea and related effects such as hypokalaemia. Risk of electrolyte imbalance with prolonged use (in children).
Bisacodyl

SIDE-EFFECTS/GENERAL SIDE-EFFECTS

- Abdominal cramp.
- colitis.
- nausea.
- vomiting

SPECIFIC SIDE-EFFECTS

- With rectal use Local irritation
- PREGNANCY May be suitable for constipation in pregnancy, if a stimulant effect is necessary.
Bisacodyl

Dosage forms:
oral suspension,
enema,
suppository,
Gastro-resistant tablet.
Sodium picosulfate
(Sodium picosulphate)

INDICATIONS:
• Constipation

CONTRA-INDICATIONS:
• Avoid in intestinal obstruction.
• Severe dehydration.

CAUTIONS:
Active inflammatory bowel disease, excessive use of stimulant laxatives can cause diarrhoea and related effects such as hypokalaemia.
Sodium picosulfate  
(Sodium picosulphate)

SIDE-EFFECTS:

- Abdominal cramp.
- Nausea.
- Vomiting.

BREAST FEEDING: Not known to be present in milk but manufacturer advises avoid unless potential benefit outweighs risk.

MEDICINAL FORMS:

- Oral solution
Osmotic laxatives

Osmotic laxatives
increase the amount of water in the large bowel, either by drawing fluid from the body into the bowel or by retaining the fluid they were administered with.
Lactulose (duphalac)

**INDICATIONS:** Lactulose is a semi-synthetic disaccharide which is not absorbed from the gastro-intestinal tract. It produces an osmotic diarrhoea of low faecal pH, and discourages the proliferation of ammonia-producing organisms. It is therefore useful in the treatment of hepatic encephalopathy.

**and its used to treat** Constipation.

**CONTRA-INDICATIONS:**
Galactosaemia.
Intestinal obstruction

**CAUTIONS:**
Lactose intolerance
Lactulose (duphalac)

SIDE-EFFECTS: Common or very common
✓ Abdominal discomfort.
✓ cramps.
✓ flatulence.
✓ nausea. (Nausea can be reduced by administration with water, fruit juice or meals).
✓ Vomiting.

Dosage Form: oral solution.
Macrogol 3350 with potassium chloride, sodium bicarbonate and sodium chloride

**Trade Names:** MOVICOL® LIQUID MOVICOL® ORAL POWDER

**Dosage Form:**
- Oral solution
- Powder

**Indications:**
- Chronic constipation
- Faecal impaction

**CONTRA-INDICATIONS:**
- Crohn’s disease.
- Intestinal obstruction
- Intestinal perforation
- Paralytic ileus.
- Severe inflammatory conditions of the intestinal tract
- Toxic megacolon.
- Ulcerative colitis.
Cautions:
- Cardiovascular impairment (should not take more than 2 'full-strength' sachets or 4 'half-strength'sachets in any one hour).
- Discontinue if symptoms of fluid and electrolyte disturbance.

Side-effects:
- Abdominal distention.
- Addominal pain.
- Flatulence.
- Nausea.

PREGNANCY: Limited data, but manufacturer advises that it can be used.

BREAST FEEDING: Manufacturer advises that it can be used.
PATIENT AND CARER ADVICE

- strength’ sachet of oral powder to be dissolved in half a glass (approx. 125 mL) of water.
- after reconstitution the solution should be kept in a refrigerator and discarded if unused after 6 hours.
Faecal softeners

- Liquid paraffin, the traditional lubricant, has disadvantages. Bulk laxatives and non-ionic surfactant ‘wetting’ agents e.g. docusate sodium also have softening properties. Such drugs are useful for oral administration in the management of haemorrhoids and anal fissure; glycerol is useful for rectal use.

- Enemas containing arachis oil (ground-nut oil, peanut oil) lubricate and soften impacted faeces and promote a bowel movement.
Glyserol
(Glycerin)

**INDICATIONS:**
Constipation.

**Dosage forms:**
Suppository.

**DIRECTIONS FOR ADMINISTRATION:**
Moisten suppositories with water before insertion.
Docusate sodium

- **INDICATIONS**: Chronic constipation.
- **CONTRA-INDICATIONS**: Avoid in intestinal obstruction.
- **CAUTIONS**:
  - Do not give with liquid paraffin.
  - Excessive use of stimulant laxatives can cause diarrhoea and related effects such as hypokalaemia.
  - Rectal preparations not indicated if haemorrhoids or anal fissure
Docusate sodium

SIDE-EFFECTS:
- Abdominal cramp.
- Diarrhoea
- (excessive use) hypokalaemia.
- Rash.

- **PREGNANCY** Not known to be harmful—manufacturer advises caution.

- **BREAST FEEDING**
  - With oral use Present in milk following oral administration—manufacturer advises caution.
  - With rectal use Rectal administration not known to be harmful.
Docusate sodium

DIRECTIONS FOR ADMINISTRATION

• With oral use in children For administration by mouth, solution may be mixed with milk or squash.

Medication forms:

• Capsule
• oral solution
• Enema
Diarrhea

Acute diarrhea:
The priority in acute diarrhea, as in gastro-enteritis, is the prevention or reversal of fluid and electrolyte depletion. This is particularly important in infants and in frail and elderly patients.

Oral rehydration preparations are used in the prevention or reversal of fluid and electrolyte depletion. Severe depletion of fluid and electrolytes requires immediate admission to hospital and urgent replacement.
Preparations used to treat diarrhoea

- Antimotility drugs. (co-phenotrope, loperamide)
- Antispasmodics. (atropin, hyosine propantheline, mebeverine, aleverine "pippermint oil"
- Antibacterial drugs.
- Adsorbents (Kaolin) and bulk-forming drugs (ispaghula, methylcellulose).
Antimotility drugs

- relieve symptoms of acute diarrhoea. They are used in the management of uncomplicated acute diarrhoea in adults.
- fluid and electrolyte replacement may be necessary in case of dehydration.
- However, antimotility drugs are not recommended for acute diarrhea in young children.
- Loperamide hydrochloride
Antispasmodics

- Antispasmodics are occasionally of value in treating abdominal cramp associated with diarrhoea but they should not be used for primary treatment. Antispasmodics and antiemetics should be avoided in young children with gastro-enteritis because they are rarely effective and have troublesome side-effects.
Antibacterial drugs

- Antibacterial drugs are generally unnecessary in simple gastro-enteritis because the complaint usually resolves quickly without them, and infective diarrhoeas often have a viral cause. Systemic bacterial infection does, however, need appropriate systemic treatment.
Adsorbents and bulk-forming drugs

- Adsorbents such as kaolin are not recommended for acute diarrhoeas. Bulk-forming drugs, such as ispaghula husk, methylcellulose, and sterculia are useful in controlling diarrhoea associated with diverticular disease.

- Colestyramine binds unabsorbed bile salts and provides symptomatic relief of diarrhoea following ileal disease or resection.
Kaolin

INTESTINAL ADSORBENTS

INDICATIONS: Diarrhoea (not recommended for acute diarrhoea)

MEDICINAL FORMS: Oral suspension
Loperamide hydrochlorid (Imodium)

INDICATIONS:
- Symptomatic treatment of acute diarrhoea.
- Chronic diarrhoea.
- Faecal incontinence.
- Pain of bowel colic in palliative care.

CONTRA-INDICATIONS:
- Active ulcerative colitis.
- Antibiotic-associated colitis.
- Conditions where abdominal distension develops.
- Conditions where inhibition of peristalsis should be avoided.

CAUTIONS: Not recommended for children under 12 years.
Loperamide

SIDE-EFFECTS:

- Common or very common:
  - Dizziness.
  - Flatulence.
  - Headache.
  - Nausea.

PREGNANCY: Manufacturers advise avoid.

BREAST FEEDING: Amount probably too small to be harmful.

HEPATIC IMPAIRMENT: Risk of accumulation—manufacturer advises caution.
MEDICINAL FORMS

- Tablet
- Orodispersible tablet
- Capsule
- Oral solution
Co-phenotrope (Lomotil)

INDICATIONS:
• Adjunct to rehydration in acute diarrhoea
• Control of faecal consistency after colostomy or ileostomy
  ❖ It's an Antimotility drug.
CONTRA-INDICATIONS:

- Gastro-intestinal obstruction.
- Intestinal atony.
- Myasthenia gravis (but some antimuscarinics may be used to decrease muscarinic side effects of anticholinesterases).
- Paralytic ileus.
- Prostatic enlargement (in adults).
- Pyloric stenosis.
- Severe ulcerative colitis.
- Significant bladder outflow obstruction.
- Toxic megacolon.
- Urinary retention.
Co-phenotrope (Lomotil)

CAUTIONS: Presence of subclinical doses of atropine may give rise to atropine side-effects in susceptible individuals or in over dosage. Young children are particularly susceptible to over dosage; symptoms may be delayed and observation is needed for at least 48 hours after ingestion.

SIDE-EFFECTS: Very rare Angle-closure glaucoma
Thank you!