Chapter

Disorders of the Gastrointestinal Tract

1

8. Diarrhoea

Diarrhoea is defined as the passage of frequent, loose, watery stools 3 or more times a day. Diarrhoea may be accompanied by vomiting.

In children, the commonest cause is viral. There is therefore usually no need to prescribe antibiotics. Other diseases like malaria, pneumonia, ear infections and urinary tract infections, may be associated with diarrhoea. Fluid loss occurs quickly in this age group because of their size. If not corrected, it may result in dehydration, which can be fatal.

A complaint of diarrhoea should be taken seriously. Always ask about the frequency and the texture of the stools. Giving antibiotics in all cases of diarrhoea may worsen or prolong the condition except in special circumstances (See section on 'Causes' below). Enemas and laxatives should not be given to patients with diarrhoea.

Causes

Acute diarrhoea (< 2 weeks)

- Infections
  - Viral: e.g. rotavirus, norovirus
  - Bacterial: e.g. Salmonella spp., Shigella, Campylobacter, *E. coli*, *Vibrio cholerae*
  - Protozoal: e.g. *Entamoeba histolytica* (amoebiasis)
- Drug-induced: e.g. penicillins

Chronic diarrhoea (> 2 weeks)

- Chronic infections: e.g. amoebiasis, tuberculosis, opportunistic infections with HIV
- Functional: e.g. irritable bowel syndrome
- Inflammatory: e.g. ulcerative colitis, Crohn's disease
- Malabsorption syndromes: e.g. chronic pancreatitis
- Malignancy: e.g. colon cancer
- Endocrine: e.g. hyperthyroidism, diabetic autonomic neuropathy
- Drug-induced: e.g. laxatives, NSAIDs

Symptoms

- Frequent watery stools
- Blood or mucus in the stool

- Presence of fever
- Reduced urine output
- Associated vomiting

SIGNS

Adults

- Anaemia
- Weight loss
- Anorexia
- Oral lesions e.g. oral ulcers, candidiasis
- Skin lesions e.g. erythema nodosum
- Signs of dehydration (dry mucous membranes, reduction in skin turgor, capillary refill > 2 seconds, tachycardia, postural hypotension)
- Enlarged thyroid
- Abdominal masses
- Rectal mass

Box 1-1: Diagnostic clues for Diarrhoea

- Diarrhoea WITH vomiting, low grade fever with no mucus in stools: consider viral infection
- Diarrhoea WITH vomiting, fever, abdominal cramps, blood and mucus in stools: consider bacterial infection
- Diarrhoea WITH blood and mucus in stool WITHOUT fever: consider amoebiasis
- Profuse diarrhoea present (rice water stools) WITH vomiting: consider cholera
- Diarrhoea WITH excessive vomiting (especially if in more than one member of the household or group): consider food poisoning
- Diarrhoea presenting with oral and/or skin lesions, weight loss etc. over long period: consider HIV
- Diarrhoea alternating with constipation in adults: consider bowel malignancy

The following table can be used to assess the degree of dehydration in children with diarrhoea:

Table 1-1: Assessment of degree of dehydration in children with diarrhoea

Assessment of degree of dehydration in children with diarrhoea

% DEHYDRATION	<5% Nil	5-10% Mild-moderate	>10% Severe
LOOK AT			
Condition	Well, alert	Restless, irritable	Lethargic, unconscious, floppy
Eyes	Normal	Sunken	Very sunken and dry
Mouth and tongue	Moist	Dry	Very dry

Assessment of degree of dehydration in children with diarrhoea

% DEHYDRATION	<5% Nil	5-10% Mild-moderate	>10% Severe
Thirst	Drinks normally, not thirsty	Thirsty, drinks eagerly	Drinks poorly
FEEL			
Skin	Goes back quickly after pinching	Goes back slowly after pinching	Goes back very slowly after pinching
DECIDE			
	The patient has no signs of dehydration	If the patient has two or more signs, including at least one sign underlined, there is some dehydration	If the patient has two or more signs, including at least one sign underlined, there is severe dehydration
TREATMENT PLAN	Weigh patient and use Treatment Plan A	Weigh patient and use Treatment Plan B	Weigh patient and use Treatment Plan C

Adapted from Integrated Management of Childhood Illnesses, WHO

Investigations

- FBC
- Blood film for malaria parasites
- Stool routine examination
- Stool for culture and sensitivity
- Blood urea and creatinine

Treatment

Treatment objectives

- To prevent dehydration
- To replace lost fluid
- To maintain nutrition by ensuring adequate dietary intake during illness
- To maintain personal hygiene
- To eliminate infecting organisms where appropriate

Non-pharmacological treatment

- Keep surroundings clean
- Improve personal hygiene e.g. hand washing after toilet
- Adequate fluid intake - oral and intravenous as necessary (See section on 'Fluid management for children with diarrhoea')
- Maintain adequate nutrition as can be tolerated

Pharmacological treatment

A. Bacterial gastroenteritis (fever, abdominal cramps, blood and mucus in stools)

Note 1-1

No antibiotics are required for suspected viral gastroenteritis. Adequate rehydration is the main requirement.

1st Line Treatment
Evidence Rating: [A]

- Ciprofloxacin, oral,
  Adults
  500 mg 12 hourly for 5 days
  Children (for all child age groups)
  15 mg/kg 12 hourly for 5 days

2nd Line Treatment
Evidence Rating: [A]

- Cefuroxime, IV,
  Adults
  750 mg 8 hourly
  Children
  25 mg/kg body weight 12 hourly
  Neonates
  > 7 days; 25 mg/kg body weight 8 hourly
  < 7 days; 25 mg/kg body weight 12 hourly

  Then
- Cefuroxime, oral,
  Adults
  250 mg 12 hourly for 5-7days
  Children
  12-18 years; 250 mg 12 hourly for 5-7 days
  2-12 years; 15 mg/kg body weight for 5-7 days (max. 250 mg 12 hourly)
  3 months-2 years; 10 mg/kg body weight for 5-7 days (max. 125 mg 12 hourly)

Note 1-2

Suspension can only be given to children above 3 months, however the IV can be given to neonates.

B. Amoebic dysentery suspected (patient failing to respond to empirical treatment for bacterial gastroenteritis within 2 days or based on stool microscopy)

Evidence Rating: [A]

- Metronidazole, oral,
  Adults
  800 mg 8 hourly for 5 days
  Children

8-12 years;	400 mg 8 hourly for 5 days
4-7 years;	200 mg 8 hourly for 5 days
0-3 years;	100 mg 8 hourly for 5 days

C. Cholera: profuse diarrhoea (rice water stool) + vomiting

1st Line Treatment

Evidence Rating: [A]

- Tetracycline, oral,

Adults

500 mg 6 hourly for 3 days

Children

Not recommended

Or

- Doxycycline, oral,

Adults

100 mg 12 hourly for 3 days

Children

Not recommended

Or

- Erythromycin, oral,

Adults

500 mg 8 hourly for 5 days

Children

> 13 years;	500 mg 8 hourly for 5 days
6-12 years;	250-500 mg 8 hourly for 5 days
2-6 years;	250 mg 6 hourly for 5 days
1 month-2 years;	125 mg 6 hourly for 5 days
Neonates;	12.5 mg/kg 6 hourly for 5 days

D. Zinc supplementation for diarrhoea

Evidence Rating: [A]

- Zinc supplement, oral,

Adults

Not required

Children

> 6 months;	20 mg/day for 10-14 days
< 6 months;	10 mg/day for 10-14 days

REFERRAL CRITERIA

Refer patients who fail to improve, or get worse, despite therapy for acute diarrhoea. Refer all patients with chronic diarrhoea to a specialist for further evaluation and management.

TREATMENT ALGORITHM

Fluid management for children with diarrhoea

Treatment Plan A–No dehydration

- Child can be treated safely at home
- Instruct mother to give home-based fluids like rice water, koko, soup,

water, and Oral Rehydration Salt (ORS).

- Breastfed babies should be given breast milk and ORS
- Give as much as child wants of all the fluids
- Child should continue to feed
- Ask the mother to return to the health facility if the child gets worse, passes more watery stools, vomits repeatedly, becomes very thirsty, eats or drinks poorly or is not better in 2 days
- Instruct mother on how to prevent diarrhoea

ORS currently recommended for use in mild to moderate diarrhoea has a reduced sodium and glucose concentration (low osmolarity).

How to prepare ORS

ORS: Dissolve the contents of one sachet of ORS in 600 ml or 1000 mls depending on type of ORS.

- To get 600 ml, use 2 small (300 ml) soft drink bottles or 1 big beer bottle
- To get 1000 ml, use 1L mineral water bottle

The child or adult should drink AS MUCH of it as he/she wants. If the child vomits, the mother should wait about 10 minutes and give it again.

Table 1-2: Treatment by Fluid Therapy - Plan A

Age	ORS Basic Amount	ORS for every extra stool passed
<2 years	500 ml or more	50–100 ml
2–10 years	1000 ml or more	100–200 ml
>10 years	2000 ml or more	100–200 ml

Treatment Plan B–mild to moderate dehydration

For the child with mild-moderate dehydration, use treatment Plan B

- Child to be treated in the health facility
- Give ORS over the first 4 hours as shown in the Table for Plan B
- If child vomits, wait 10 minutes and start again
- Continue with other fluids the child will accept
- Instruct mother to continue breast feeding if child is breastfeeding
- Observe stools passed and record quantity
- Check for signs of worsening dehydration
- If eyes become puffy, it means too much fluid has been given so stop ORS and re-evaluate
- Reassess state of dehydration after 4 hours
- If clinical state has improved with no dehydration - go to plan A
- If there is still mild-moderate dehydration repeat plan B
- If condition is worsening - go to plan C

Table 1-3: Treatment by Fluid Therapy - Plan B				
Weight	<6 kg	6 <10 kg	10-<12 kg	12–19 kg
Age*	Up to 4 months	4 months up to 12 months	12 months up to 2 years	2 years up to 5 years
Amount of ORS	200-400 ml	400-700 ml	700-900 ml	900-1400 ml

*Use the child's age only when you do not know the weight. The approximate amount of ORS required (in ml) can also be calculated by multiplying the child's weight (in kg) by 75

Treatment Plan C–Severe dehydration

- A child with severe dehydration requires urgent treatment with IV fluids in hospital
- If the child can drink, give ORS by mouth while the IV line is being set up
- Start IV fluids immediately. Give 100 ml/kg Ringer's lactate solution or, if not available, normal saline or cholera replacement fluid (5:4:1), divided as shown in the Table for Plan C below:
- If you cannot give the above treatment and cannot pass a nasogastric tube, refer to a health facility that can do so.
- Reassess the child every 1-2 hours. If hydration status is not improving, give the IV fluid more rapidly than as stated in the Table for Plan B
- Also give ORS (about 5 ml/kg body weight/hour) as soon as the child can drink: usually after 3-4 hours (infants) or 1–2 hours (children)
- Reassess an infant after 6 hours and a child after 3 hours. Classify dehydration. Then choose the appropriate plan (A, B, or C) to continue treatment
- Assess child hourly. If not improving or dehydration is worse, increase drip rate
- Do not stop the IV fluids until the child has been observed to retain the ORS for at least 1 hour and there is improvement in the clinical condition
- Continue ORS on treatment plan B and continue to observe child until child has no signs of dehydration, then move to Plan A
- Severe diarrhoea may be complicated by marked fluid loss accompanied by loss of potassium (hypokalaemia) or on the other hand, impaired renal function leading to acidosis and elevated blood potassium (hyperkalaemia)
- When the patient is passing adequate amounts of urine, probably indicating good renal function, start potassium containing foods such as coconut water and fresh fruits (e.g. banana)
- If there is clinical and/or laboratory evidence of severe hypokalaemia, potassium should be given by the intravenous route using potassium chloride but only in a hospital. Potassium containing fluids such as

half strength Darrow's solution or Ringer's lactate may be added
- If possible infants and children should continue to breastfeed or eat during the period of diarrhoea

Table 1-4: Treatment by Fluid Therapy - Plan C

Age	First give 30 ml/kg in:	Then give 70 ml/kg in:
Infants (< 12 months)	1 hour*	5 hours
Children (12 months up to 5 years)	30 minutes*	2½ hours

*Repeat once if radial pulse is still very weak or not detectable.

Note 1-3

Anti-diarrhoeal medicines like Mist Kaolin, diphenoxylate/atropine, codeine, loperamide should not be used in the treatment of diarrhoea in children and are likely to do more harm than good. Similarly, antibiotic preparations with kaolin or pectin are of no therapeutic value in the management of diarrhoea.

9. Rotavirus Disease and Diarrhoea

Rotavirus is the most common cause of severe diarrhoea in young children. It accounts for more than a third of all hospitalizations of children less than 5 years. It occurs year round with peaks between the dry months (December - March). Children are infected by age 2 to 3 years and re-infections are common.

CAUSES

- Rotavirus: 5 types of rotavirus are known to cause >90% of all cases worldwide

SYMPTOMS

- Fever
- Vomiting
- Profuse watery diarrhoea
- Thirst

SIGNS

- Sunken eyes
- Diminished skin turgor
- Altered consciousness, depending on the degree of dehydration

INVESTIGATIONS

- Detection of rotavirus antigen in stool by an enzyme immunoassay (EIA)

TREATMENT

Treatment objectives

- Correction of fluid and electrolyte deficits

- Replacement of on-going fluid losses
- Adequate nutrition to prevent malnutrition

Non-pharmacological treatment

- Home-based fluids e.g. breast milk, porridges, coconut drink
- Nutrition: feed as can be tolerated during the episode, give an extra meal per day for 2 weeks after the episode

Pharmacological treatment

A. ORS and Zinc supplementation
(See section on 'Diarrhoea')

Referral Criteria

- Poor response to rehydration process (passing more stools than drinking)
- Poor drinking
- Blood in stool
- Poor feeding
- Altered consciousness/convulsions
- Diarrhoea and vomiting continuing for > 3 days

Note 1-4

Prevention:
Two (2) doses of Rotavirus vaccine, given at 6 - 10 weeks, is effective in preventing rotavirus diarrhoea. The 2nd dose should be given by 16 weeks, and not later than 24 weeks. Rotavirus vaccine is now currently given as part of routine immunization in Ghana. (See section on 'Immunisation').

10. Constipation

In general, constipation refers to bowel movements that are infrequent or stools that are difficult to pass. There is great individual variation in normal bowel habits; therefore emphasis should be laid on changes in the bowel habit.

Diarrhoea alternating with constipation may indicate a large bowel cancer especially in those aged 40 years and above. In children and the elderly, this may indicate chronic constipation with spurious diarrhoea.

The habitual use of laxatives is very common in the community. This practice must be discouraged to avoid hypokalaemia and its consequences.

Causes

Medical

- Diet deficient in roughage
- Ignoring the urge to defaecate e.g. due to immobility
- Hypothyroidism
- Irritable bowel syndrome
- Hypercalcaemia
- Drugs e.g. atropine, codeine, morphine, tricyclic antidepressants,

disopyramide
- Lazy bowel from chronic laxative use including 'herbal' preparations
- Lack of exercise
- Dehydration and starvation (particularly in children)

Surgical
- Gastrointestinal obstruction
- Anal fissure and other painful perianal lesions
- Carcinoma of the rectum and sigmoid colon
- Foreign body in the gut
- Pelvic mass e.g. fibroid, foetus
- Aganglionic and acquired megacolon
- Pseudo-bowel obstruction (Ogilvie syndrome) following immobility from any cause

SYMPTOMS
- Inability to move bowels
- Passing hard stools
- Infrequent passing of stools
- Straining to pass stools
- Feeling of incomplete evacuation of bowel
- Inability to pass flatus, colicky abdominal pain with or without vomiting

SIGNS
- Frequent high pitched bowel sounds - suspect mechanical bowel obstruction
- Absent bowel sounds - suspect paralytic ileus
- Signs of peritonitis (generalised tenderness, guarding and rebound tenderness, refer appropriate section) -`suspect gangrenous bowel

INVESTIGATIONS
- Digital rectal examination (must be carried out in all patients with suspected diagnosis of constipation)
- Stool for occult blood
- Plain abdominal X-ray (erect and supine)
- Proctoscopy/proctosigmoidoscopy/colonoscopy (must not be done if acute intestinal obstruction is suspected)

TREATMENT

Treatment objectives
- To identify possible cause of constipation
- To relieve constipation

Non-pharmacological treatment
- Adherence to regular exercise
- High fibre diet
- Adequate fluid intake (minimum of 3.2L of water per day if no contraindications exist)

Pharmacological treatment

A. Management of Constipation in Adults

1st Line Treatment
Evidence Rating: [C]

- Bisacodyl, oral, 10-20 mg at night
  Or
- Senna, oral, 15-30 mg at bedtime (maximum 70-100 mg daily). Doses above 70 mg should be divided 12 hourly
  Or
- Lactulose, oral, 15-30 ml daily until response, then 10-20 ml daily

2nd Line Treatment
Evidence Rating: [C]

- Bisacodyl, rectal, 10 mg in the morning
  Or
- Glycerol suppositories, rectal, 4 g at night
  Or
- Liquid paraffin, oral, 10-30 ml at night
  Or
- Milk of Magnesia, oral, 5-10 ml in a glass of water, 12-24 hourly

B. Management of Constipation in Children

1st Line Treatment
Evidence Rating: [C]

- Lactulose, oral,
  10-18 years; 15 ml 12 hourly
  5-10 years; 10 ml 12 hourly
  1-5 years; 5 ml 12 hourly
  < 1 year; 2.5 ml 12 hourly
  Or
- Glycerol suppositories, rectal,
  2-5 years; 2 g at night
  < 1 year; 1 g at night
  Or
- Bisacodyl, rectal,
  > 10 years; 5 mg in the morning
  < 10 years; on medical advice only
  Or
- Senna, oral,
  6-12 years; 5-40 ml at bedtime
  2-6 years; 2.5-20 ml at bedtime

Note 1-5

Do not use magnesium salts in patients with impaired renal function.

REFERRAL CRITERIA

The following categories of patients should be referred to a surgeon:

- Patients with absent bowel sounds, vomiting or not passing flatus
- Cases resistant to medical treatment
- Any suspected surgical cause

11. Peptic Ulcer Disease

Peptic ulcer may be duodenal or gastric. Duodenal ulcers are more common and occur more often in younger adults. Gastric ulcers usually occur after middle age. Gastric ulcers should be taken seriously because they may be malignant.

Peptic ulcers may lead to life threatening complications of bleeding, perforation and gastric outlet obstruction.

CAUSES

- *Helicobacter pylori* (*H. pylori*) infection
- Excessive secretion of gastric acid
- Inadequate protection of the lining of the stomach and duodenum against digestion by acid and pepsin
- Medicines e.g. non-steroidal anti-inflammatory drugs (NSAIDs), corticosteroids

SYMPTOMS

- Episodic abdominal pain (often aggravated by dietary indiscretions and lifestyle)
  - May be a minor discomfort, gnawing, burning, dull ache or very severe pain
  - Typically pain is in the epigastrium or right hypochondrium
  - Occasionally high up behind the sternum or low down around the umbilicus
  - In duodenal ulcer, pain typically comes on when the patient is hungry and may wake the patient up in the middle of the night.
  - In gastric ulcer, it is typically worsened by food, and may be relieved by vomiting
  - Is relieved by alkalis and food in duodenal ulcer
- Vomiting may occur in both duodenal and gastric ulcers. It is usually a complication in duodenal ulcer (gastric outlet obstruction) but may be self-induced in gastric ulcer to relieve pain

In children

- Pain may be peri-umbilical

SIGNS

- There may be no abdominal signs
- Weight loss (sometimes in gastric ulcer)
- Weight gain (sometimes in duodenal ulcer)
- Tenderness - epigastrium, right hypochondrium or umbilical region

Investigations

- Haemoglobin
- *H. pylori* stool antigen
- Oesophago-gastro-duodenoscopy (endoscopy)
- Barium meal (in the absence of endoscopy)
- Stool examination (to exclude intestinal parasites)

Treatment

Treatment objectives

- To relieve pain (dyspepsia) and reduce gastric acid secretion
- To eradicate *H. pylori* if present
- To promote healing of the ulcer
- To prevent recurrence of the ulcer
- To prevent and manage complications

Non-pharmacological treatment

- Avoid alcohol and tobacco intake
- Avoid foods that aggravate the pain
- Allay anxiety and stress
- Surgical treatment: for chronic cases with severe periodic attacks, failed medical treatment and complications e.g. perforation, gastric outlet obstruction and haemorrhage)

Pharmacological treatment

A. Dyspepsia

1st Line treatment
Evidence Rating: [A]

- Magnesium trisilicate, oral, 15 ml 8 hourly (in-between meals and at bedtime to control dyspepsia)

Or

- Aluminium hydroxide, oral, 500 mg 6 hourly (in-between meals and at bedtime)

Note 1-6

Avoid taking antacids within 2 hours of proton pump inhibitors (PPIs) e.g. omeprazole, esomeprazole, pantoprazole

2nd Line treatment
Evidence Rating: [A]

- Omeprazole, oral,
  Adults
  20 mg daily for 4 weeks. Repeat course if ulcer is not fully healed.

B. NSAID-associated duodenal or gastric ulcer and gastro-duodenal erosions

Evidence Rating: [A]

- Esomeprazole, oral,

Adults
20 mg daily for 4 weeks. Repeat course if ulcer is not fully healed.
Or

- Omeprazole, oral,
  Adults
  20 mg daily for 4 weeks. Repeat course if ulcer is not fully healed.
  Or
- Pantoprazole, oral,
  Adults
  20-40 mg daily for 4 weeks. Repeat course if ulcer is not fully healed.

C. Bleeding peptic ulcer (may be an indication for surgery)
Evidence Rating: [A]

- Esomeprazole, IV,
  Adults
  40 mg daily
  Or
- Omeprazole, IV,
  Adults
  40 mg 12 hourly for up to 5 days

D. *Helicobacter pylori Eradication*

Majority of patients presenting with duodenal ulcer are infected with *Helicobacter pylori*. Eradication of *H. pylori* should therefore be done using a 10-14 day course of treatment consisting of a PPI plus a combination of two of the antibiotics indicated in the table below.

Table 1-5: *Helicobacter pylori* **Eradication Therapy**

Helicobacter pylori Eradication therapy			
PPI	Antibiotic		
	Amoxicillin, oral ξ	Clarithromycin, oral	Metronidazole, oral
Esomeprazole, oral 20 mg 12 hourly	1 g 12 hourly	500 mg 12 hourly	----------
	----------	500 mg 12 hourly	400 mg 12 hourly
Or Omeprazole, oral 20 mg 12 hourly	1 g 12 hourly	500 mg 12 hourly	----------
	500 mg 8 hourly	----------	400 mg 8 hourly
	----------	500 mg 12 hourly	400 mg 12 hourly
Or Pantoprazole, oral 40 mg 12 hourly	1 g 12 hourly	500 mg 12 hourly	----------
	----------	500 mg 12 hourly	400 mg 12 hourly

ξ Avoid treatment regimens including Amoxicillin in patients with penicillin allergy

REFERRAL CRITERIA

Refer for specialist care when there is failure of *H. Pylori* eradication

or if surgery is indicated as stated above.

12. Gastro-oesophageal Reflux Disease

Gastro-oesophageal Reflux Disease (GORD) is caused by backflow of gastric and/or duodenal contents past the lower oesophageal sphincter into the oesophagus without belching or vomiting.

The disease is classified into two groups based on endoscopy findings as non-erosive gastro-oesophageal disease (non-erosive GORD) and erosive gastro-oesophageal disease (erosive GORD). Failure to treat may result in oesophagitis, ulceration, strictures and rarely adenocarcinoma.

Causes

- Obesity
- Hiatus hernia
- Increased intra-abdominal pressure e.g. in pregnancy
- Long term use of nasogastric tube
- Agents that decrease lower oesophageal sphincter pressure e.g. alcohol, cigarettes, anticholinergics (e.g. Hyoscine butylbromide, Propantheline bromide), other drugs – Morphine, Diazepam, Pethidine and Calcium channel blockers
- Children with chronic neurological disease (e.g. cerebral palsy)

Symptoms

- Heartburn (worsens with vigorous exercise, bending forward, lying; relieved by antacids and sitting upright)
- Dyspepsia
- Early satiety
- Retrosternal and epigastric pain (mimics angina pectoris by radiating to neck, jaws and arms. The pain is worse on bending down e.g. sweeping)
- Pain on swallowing
- Difficulty swallowing
- Nocturnal regurgitation (wakes patients up with coughing, choking and filling of the mouth with 'saliva')
- Asthma-like (may be worse at night)

In children

- Failure to thrive/refusing food
- Vomiting
- Coughing
- Forceful regurgitation which may lead to aspiration pneumonia
- Iron deficiency anaemia
- Wheezing

Signs

- May be none

- Epigastric tenderness occasionally
- Chest signs (e.g. wheezing)

INVESTIGATIONS

- Oesophago-gastro-duodenoscopy (OGD), i.e. upper gastro-intestinal tract endoscopy
- Chest X-ray to exclude other causes
- Abdominal ultrasound (to exclude other diseases)
- Barium swallow with fluoroscopy (especially useful in children)
- Oesophageal pH monitoring (in cases that are difficult to diagnose)
- Lower oesophageal sphincter manometry (in cases that are difficult to diagnose)

TREATMENT

Treatment objectives

- To relieve symptoms
- To prevent complications

Non-pharmacological treatment

Lifestyle changes:

- Elevate head of bed by about 30 degrees or sleep on pillows
- Avoid sleeping within 3 hours after eating
- Avoid over-eating and heavy meals before bedtime
- Avoid foods that aggravate symptoms e.g. fatty and spicy food
- Avoid smoking and alcohol
- Avoid Non-Steroidal Anti-Inflammatory Drugs (NSAIDs)
- Encourage moderate exercise
- Weight reduction in overweight and obese individuals
- Avoid corsets, instead wear loose clothing
- Surgical treatment: Fundoplication (for severe cases, treatment failures and complications)

Pharmacological treatment

A. Non-erosive GORD

Evidence Rating: [B]

- Magnesium trisilicate, oral, 15 ml 8 hourly (in between meals and at bedtime to control dyspepsia)

  Or
- Antacids containing Aluminum hydroxide, Magnesium hydroxide, Simethicone, Calcium alginates

  Or
- Omeprazole, oral,

  Adults

  20 mg daily for 4-8 weeks

  Children

> 20 kg;	20 mg daily for 4-8 weeks
10-20 kg;	10 mg daily for 4-8 weeks
5-10 kg;	5 mg daily for 4-8 weeks

Or

- Esomeprazole, oral,
  Adults
  40 mg daily for 4 to 8 weeks

Or

- Rabeprazole, oral,
  Adults
  20 mg daily for 4 to 8 weeks

B. Severe or Erosive GORD

- Omeprazole, oral,
  Adults
  20 - 40 mg daily for 8 weeks
  Children
  > 20 kg; 20 mg daily for 4-8 weeks
  10-20 kg; 10 mg daily for 4-8 weeks
  5-10 kg; 5 mg daily for 4-8 weeks

Or

- Esomeprazole, oral,
  Adults
  40 mg daily for 8 weeks

Or

- Rabeprazole, oral,
  Adults
  20-40 mg daily for 8 weeks

C. Severe or Erosive GORD (with bloating)

- Use medications in Section B above for 'Severe GORD'

And

- Metoclopramide, oral,
  Adults
  10 - 20 mg 6-8 hourly

Or

- Domperidone, oral,
  Adults
  10 mg 6-8 hourly

Referral Criteria

Refer cases not responding to the measures above to a physician or surgical specialist, as well as severe cases, treatment failures and individuals with complications.

13. Pain Originating from the Oesophagus

Oesophageal pain is usually burning in quality and tends to be localised behind the sternum. Oesophageal pain may be associated with difficulty in swallowing (dysphagia). Dysphagia to water suggests achalasia,

while that to solids and not water suggests mechanical obstruction by tumour or stricture. It may sometimes be confused with other causes of chest pain (See section on 'Chest Pain').

CAUSES

- Irritation of the oesophageal mucosa by reflux of the acidic contents of the stomach (Gastro-oesophageal Reflux Disease (GORD)
- Oesophageal candidiasis
- Hiatus hernia
- Achalasia
- Spasm of the oesophageal muscle in response to obstruction.
- Oesophageal tumours

SYMPTOMS

- Retrosternal chest pain worsened by swallowing (pain worse on lying flat may suggest GORD)
- Regurgitation of ingested material
- Difficulty in swallowing

SIGNS

- Usually none
- Patient may be obese or severely underweight in the case of GORD
- Severe weight loss may suggest tumour or candidiasis from immune suppression
- There may be oral candidiasis in the case of oesophageal candidiasis

INVESTIGATIONS

- Barium swallow
- Oesophago-gastroduodenoscopy (upper GI endoscopy)
- Oesophageal manometry when achalasia is suspected

TREATMENT

Treatment objectives

- To relieve pain
- To treat identified cause

Non-pharmacological treatment

- Bland foods and milk (may sometimes relieve the pain)

Pharmacological treatment

A. For GORD

1st Line Treatment
Evidence Rating: [B]

- Omeprazole, oral,
  Adults
  20 mg 12 hourly for 14 days
  Or
- Esomeprazole
  Adults

20-40 mg daily for 14 days

B. For patients not responding to monotherapy with PPI

Evidence Rating: [B]

- Omeprazole, oral, 20 mg 12 hourly for 14 days
  Or
- Esomeprazole, oral, 20-40 mg daily for 14 days
  And
  Magnesium trisilicate, oral, 10 ml 8 hourly for 10 days

C. For oesophageal candidiasis

Evidence Rating: [A]

- Nystatin, oral, (swish in mouth for several minutes and then swallow)
  Adults
  400,000-600,000 units 6 hourly for 7 days
  Or
- Fluconazole, oral,
  Adults
  200 mg stat.
  Then
  100 mg daily for 14 days

Referral Criteria

Refer to a specialist for confirmation of diagnosis and management.

14. Haemorrhoids

Haemorrhoids or "piles" are enlarged, displaced anal cushions derived from engorged veins, which primarily presents with anal bleeding.

First-degree haemorrhoids remain in the anal canal. Second-degree haemorrhoids prolapse, but reduce spontaneously, whereas third degree haemorrhoids prolapse and have to be replaced manually or remain prolapsed permanently until surgically treated.

The history is very important. The nature of the bleeding, associated pain and other symptoms help differentiate haemorrhoids from other more sinister conditions. Always do a digital rectal examination to exclude carcinoma and other conditions when a patient complains of pain or bleeding from the anus. Altered or dark blood, or blood mixed with stools, should raise suspicion of bleeding higher up in the rectum or colon.

No treatment is required for haemorrhoids that are asymptomatic. Avoid the use of purgatives.

Causes

- Increased intra-abdominal pressure e.g. chronic cough, pregnancy, intra-abdominal or pelvic tumours
- Excessive straining at stools from constipation or diarrhoea
- Familial predisposition

- Chronic liver disease with portal hypertension
- Anorectal tumours

SYMPTOMS

- Passage of bright red blood at defaecation
  - Not mixed with stools
  - May spray the toilet bowl or only found on the toilet paper after cleaning
- Mucoid discharge
- Swelling at anus
- Perianal irritation or itch (pruritus ani)
- Discomfort after opening bowels
- Anal pain (occurs during an acute attack of prolapse with thrombosis, congestion and oedema)
- Symptoms of anaemia

SIGNS

- May be none (inspection of the anus and digital rectal examination may be normal)
- Redundant folds of skin (skin tags) seen in the position of the haemorrhoids. Straining may show the haemorrhoids
- Swelling at the anus (in third degree haemorrhoids)
- Palpable thrombosed internal haemorrhoids on rectal examination
- Signs of complications (profuse bleeding with anaemia or haemorrhagic shock, prolapse, strangulation, thrombosis, infection or ulceration)
- Pallor

INVESTIGATIONS

- FBC
- Proctoscopy (the gold standard for diagnosis)
- Sigmoidoscopy (to exclude carcinoma of rectum)

TREATMENT

Treatment objectives

- To correct anaemia, if present
- To relieve symptoms
- To prevent complications

Non-pharmacological treatment

- Increase intake of fluid and roughage
- Avoid prolonged straining at defecation
- For prolapsed haemorrhoids, lie patient down and elevate the foot end of the bed. Try gentle digital reduction after application of local anaesthetic cream. If this fails, apply cold compresses. Sedation of the patient may be required
- For infected haemorrhoids, warm sitz baths 2-3 times a day
- Surgical treatment:

- Rubber band ligation for second-degree haemorrhoids.
- Haemorrhoidectomy for third degree haemorrhoids.
- Haemorrhoids developing during pregnancy should be managed conservatively as most will resolve after delivery

Pharmacological treatment

A. When associated with constipation

Evidence Rating: [C]

- Liquid paraffin, oral,
  Adults
  10-30 ml at night
  Or
- Senna granules, oral,
  Adults
  1 sachet with water after supper

B. When associated with local itching or discomfort

- Soothing agent (with or without steroids), applied or inserted rectally,
  Adults
  One suppository 12 hourly for 7-10 days

C. For infected haemorrhoids

1st Line treatment
Evidence Rating: [B]

- Gentamicin, IV,
  Adults
  40-80 mg 8 hourly for 5 to 7 days
  And
- Metronidazole, oral,
  Adults
  400 mg 8 hourly for 5 to 7 days

2nd Line treatment
Evidence Rating: [B]

- Ciprofloxacin, oral,
  Adults
  500 mg 12 hourly
  And
- Metronidazole, oral,
  Adults
  400 mg 8 hourly for 5 - 7 days

3rd Line treatment
Evidence Rating: [B]

- Amoxicillin, oral,
  Adults
  500 mg 8 hourly

And

- Metronidazole, oral,
  Adults
  400 mg 8 hourly for 5 to 7 days

D. When associated with anaemia

- Iron preparation (ferrous sulphate/fumarate) (See section on 'Anaemia')

Or

- Blood transfusion as indicated

REFERRAL CRITERIA

The patient should be referred to a facility with resources for rubber band ligation or operative treatment if indicated.