CHAPTER 6

GASTROINTESTINAL DISEASES

RECURRENT ORAL APHTHOUS ULCERS

SALIENT FEATURES

- Single or multiple 1-15 mm size painful ulcers surrounded by erythematous mucosa occurring repeatedly any where in the oral mucosa (lip, tongue, soft palate or oropharynx). Usually heal in 1-2 weeks time.

Treatment

Rule out secondary causes like malabsorption syndrome, inflammatory bowel disease, Behcet's disease and recurrent trauma from tooth/denture and treat accordingly.

Nonpharmacological

Oral hygiene—repeated mouth wash with plain water specially after eating any thing (for details see section on Oral Hygiene in Chapter 20) and avoid constipation.

Pharmacological

1. Symptomatic treatment with application of any gel containing local anaesthetic before taking meals.
2. Only in severe cases with large multiple ulcers.
   Pellets Hydrocortisone 5 mg to be kept on the ulcer and sucked every 4 hours for 3-5 days.
   Or
   Tab. Prednisolone 0.5 mg/kg/day in a single dose for 3-5 days.

Patient education

- Maintain good oral hygiene.
- Avoid precipitating factors, if any.
- Avoid spicy food.
- Use soft brush and use straw for drinking.

Reference

1. Oral Manifestation of Disease. In: Harrison's Principles of Internal Medicine. Fauci, Braunwald, Kasper et al (eds), 18th Edition, McGraw Hill Company Inc., New York, 2012; pp. 267-276.

ACUTE OROPHARYNGO-OESOPHAGEAL CANDIDIASIS

Commonly occurs as opportunistic infection in individuals with uncontrolled diabetes mellitus or immunosuppressed conditions (AIDS, malignancy, chronic steroid therapy, cytotoxic drugs). Usually caused by *Candida albicans*.

SALIENT FEATURES

- Discrete or confluent curdy white adherent plaques on the oropharyngeal/ oesophageal mucosa.
- Oral lesions are usually painless but oesophageal involvement produces painful dysphagia.
- Diagnosis is confirmed by demonstration of pseudohyphae on wet smears or culture.

Treatment

Susp. Nystatin local application in mouth and 100,000 units orally 4 hourly for 5-7 days.

Or

Soln. Clotrimazole 1% to be applied locally for 5-7 days.

Or

Tab. Ketoconazole 200 mg once a day for 7 days.

Or

Tab. Fluconazole 100 mg/day for 10-14 days.

Reference

1. Candidiasis. In: Harrison's Principles of Internal Medicine. Fauci, Braunwald, Kasper et al (eds), 18th Edition, McGraw Hill Company Inc., New York, 2012; pp. 1651-1655.

DYSPEPSIA

A syndrome of chronic or recurrent abdominal pain or discomfort in the upper abdomen. Discomfort is defined as a subjective negative feeling that is nonpainful, and can incorporate a variety of symptoms including early satiety or upper abdominal fullness. Dyspepsia may be organic due to acid-peptic disorders, upper GI malignancy or functional which may again be classified as 'ulcer-like dyspepsia' (upper abdominal pain related to food intake), 'dysmotility type' (nausea, vomiting, belching, early satiety, bloating) or 'non-specific dyspepsia'. Organic dyspepsia should be excluded by history and upper GI endoscopic examination.

Treatment

Nonpharmacological

Avoid excess tea, coffee, alcohol and smoking and anything in the diet that precipitates symptoms. Avoid high-fat meals; eating frequent and smaller meals throughout the day can sometimes be helpful. Avoid specific foods that precipitate symptoms.

Pharmacological

Dyspeptic patients over 55 years of age, or those with alarm features should undergo prompt oesophagogastroduodenoscopy (EGD) such as unexplained weight loss (>10% body weight), anorexia, early satiety, vomiting, progressive dysphagia, odynophagia, bleeding, anaemia, jaundice, an abdominal mass, lymphadenopathy, a family history of upper gastrointestinal tract cancer, or a history of peptic ulcer, previous gastric surgery or malignancy. A few patients younger than 55 years of age with an upper gastrointestinal malignancy present without alarm symptoms.

A working diagnosis of functional dyspepsia is likely to be appropriate for most patients with dyspepsia who have no alarm features and in whom initial investigations are negative. Repeated or increasingly invasive investigation in pursuit of an organic cause for the symptoms may be both futile and counter-productive. Explain role of life-style and diet. Medication is not necessary for all patients with functional dyspepsia. When medication is given, short-term treatment, intermittent if necessary, is likely to be more appropriate than long-term continuous therapy.

Test and treat for *Helicobacter pylori* (*H. pylori*) in populations with a moderate to high prevalence of *H. pylori* infection using a validated noninvasive test and a trial of acid suppression, if eradication is successful but symptoms do not resolve. *H. pylori* treat infection with triple regimen (see section on Peptic Ulcer). Assess for clinical response after 4 weeks of the treatment.

Or

In low prevalence situations, Cap. Omeprazole 20 mg once daily 30 minutes before breakfast for 4-6 weeks. If initial acid suppression fails after 2–4 weeks, it is reasonable to consider changing drug or dose.

If the patient fails to respond or relapses rapidly on stopping antisecretory therapy, then the test-and-treat strategy for *H. pylori* is best applied before consideration of referral for EGD. **EGD is not mandatory in those who remain symptomatic as the yield is low; the decision to endoscope or not must be based on clinical judgement.**

Prokinetic agents (Domperidone or mosapride) are not currently recommended as first-line therapy for uninvestigated dyspepsia. No evidence was identified on the efficacy of antacids in the management of functional dyspepsia.

Follow-up

Short courses (4-6 weeks) of the drug may be repeated or alternative drug tried, if patient comes back with relapse after stopping the drug. Long-term treatment may be

continued for up to a year and to rule out organic cause. Investigate fully before starting treatment, if patient is over 55 years of age, or those with alarm features.

Patient education

- Reassure patient that functional dyspepsia is very common and is not itself serious, though the discomfort, pain, distension and fullness which are perfectly genuine, are often unpleasant and bothersome.
- Avoid precipitating factors—avoid excess tea, coffee, alcohol and smoking and anything in the diet that precipitates symptoms. Avoid high-fat meals; avoid specific foods that precipitate symptoms.
- Eating frequent and smaller meals throughout the day can sometimes be helpful.

References

1. Management of functional Dyspepsia. Scottish Intercollegiate Guidelines Network (SIGN) Guidelines 2012.
2. Nausea, Vomiting and Indigestion. In: Harrison's Principles of Internal Medicine. Fauci, Braunwald, Kasper et al (eds), 18th Edition, McGraw Hill Company Inc., New York, 2012; pp. 301-307.
3. Guidelines for the Management of Dyspepsia. American Journal of Gastroenterology. Am J Gastroenterol 2005;100:2324–2337.

GASTRO-OESOPHAGEAL REFLUX DISEASE

A common disorder caused by retrograde flow of gastric contents through an incompetent gastro-oesophageal junction. Dyspepsia is a chronic or recurrent pain or discomfort centred in the upper abdomen; patients with predominant or frequent (more than once a week) heartburn or acid regurgitation, should be considered to have gastro-oesophageal reflux disease (GERD) until proven otherwise.

SALIENT FEATURES

- Retrosternal pain, heart burn and regurgitation mostly occurring after meals; rarely may present with chronic cough, laryngitis; recurrent pulmonary infections especially in children and bronchospasm.
- Disease is classified as mild, if endoscopy reveals no or minimal oesophageal mucosal inflammation and moderate-to-severe, if there are ulcers with or without stricture formation in distal oesophagus.
- Diagnosis is by history, upper GI endoscopy. 24-h pH monitoring required in difficult cases.

Treatment

Nonpharmacological

'Lifestyle modification' like weight reduction if obese, elimination of fatty foods, avoiding alcohol and smoking, excessive consumption of tea/coffee, elevation of head-end of the bed, taking early dinner (2-3 hours before sleep).

Pharmacological

A stepwise approach as indicated below.

Mild gastro-oesophageal reflux

For immediate symptomatic relief, Antacid gel (with or without alginate) 10-15 ml or 2-3 tablets (chewed) taken 4-6 times a day ½ to 1 hour after meals; may be given for a long time depending upon patients symptoms. If no relief, add (1) and/or (2) as below.

Specific therapy

1. Tab. Domperidone 10 mg 3 times a day 30 minutes before meals for 4-6 weeks or even for longer, if needed.
   Or
   Tab. Mosapride 5 mg 3 times a day 30 minutes before meals for 4-6 weeks or longer, if needed.
2. Cap. Omeprazole 20 mg once daily 30 minutes before meals for 4-6 weeks.

Follow-up. Omeprazole courses may be repeated or continued for several months, if patient relapses while on antacids or Domperidone/Mosapride.

Moderate-to-severe gastro-oesophageal reflux disease (endoscopically proved erosive oesophagitis)

1. Cap. Omeprazole 20 mg twice daily 30 minutes before meals for 4 weeks, followed by further 4-8 weeks, if not fully healed.
   Or
   Cap. Lansoprazole 30 mg 2 times a day 30 minutes before meals for 3 months.
   Or
   Tab. Pentoprazole 40 mg 2 times a day 30 minutes before meals for 3 months.

Follow-up. Repeat endoscopy after 3 months to confirm healing of oesophagitis. If healed, continue maintenance treatment as in mild reflux disease or single daily dose of 10-20 mg Omeprazole (or any other PPIs). Refer to the specialist, if no or inadequate response.

Patient education

- Explain about chronic nature of the illness, role of weight reduction and early small night-time meal.
- Wearing tight clothes around the abdomen may also increase the reflux.

References

1. Management of GERD in Adults. In: Approach to Patients with Chronic Gastrointestinal Disorder'.Corazziari E. (ed), Messaggi Milano SRL, Itali, 1999; pp. 255-69.
2. Oesophageal symptoms and Motility Disorders. In: Medicine International. Jewell DP, Thillainayagam (eds), The Medicine Publishing Co. Oxford, UK 1998; pp. 1-6.

3. Nausea, Vomiting and Indigestion. In: Harrison's Principles of Internal Medicine. Fauci, Braunwald, Kasper et al (eds), 18th Edition, McGraw Hill Company Inc., New York, 2012; pp. 301-307.
4. Disease of the Oesophagus. In: Harrison's Principles of Internal Medicine. Fauci, Braunwald, Kasper et al (eds), 18th Edition, McGraw Hill Company Inc., New York, 2012; pp 2427-2437.
5. Gastro-oesophageal reflux disease. In: Harrison's Principles of Internal Medicine. Fauci, Braunwald, Kasper et al (eds), 18th Edition, McGraw Hill Company Inc., New York, 2012; pp. 2433-2435.

PEPTIC ULCER

Acid-pepsin-related ulceration of mucosa of stomach and duodenum.

SALIENT FEATURES

- Sharp or gnawing epigastric pain, may be worsened (gastric ulcer) or relieved by intake of food (in duodenal ulcer). Nocturnal pain commonly awakens the patient at midnight but early morning pain is very rare. Symptoms are recurrent and periodic.
- Complications include upper GI bleed, perforation and gastric outlet obstruction. 95% of duodenal ulcers and 60% of gastric ulcers are related to *H. pylori* infection and remaining related to NSAID intake.
- Diagnosis of peptic ulcer is confirmed by upper GI endoscopy. *H. pylori* infection may be diagnosed by serology, rapid urease test, histopathology of antral mucosa or C13 breath test.

Treatment

Nonpharmacological

Stop smoking and avoid/minimize intake of NSAIDs or switch over to a safer NSAID.

Pharmacological

Symptomatic treatment

Cap. Omeprazole 20 mg single dose 30 minutes before breakfast for 6 weeks.

Or

Antacid gel 10-15 ml or 2-3 tablets (chewed) taken 4-6 times a day ½ to 1 hour after meals.

It is recommended that the presence of *H. pylori* is confirmed before starting eradication treatment.

Preferred one week triple therapy for eradication of *H. pylori* regimen

1. Tab. Omeprazole 20 mg 2 times a day.
2. Tab. Clarithromycin 500 mg 2 times a day.
3. Cap. Amoxycillin 1 g 3 times a day.

All medicines to be taken 15-30 minutes before meals.

Alternative regimen. Replace Tab. Clarithromycin with Tab. Metronidazole 400 mg 3 times a day or Tab. Tinidazole 600 mg 2 times a day given after meals.

Concurrent use of proton pump inhibitors (PPI) and ranitidine is not recommended due to the potential decrease in the PPI effectiveness. In cases of ulcers refractory to Ranitidine, PPI is recommended.

Refractory and recurrent ulcers include ineffective eradication therapy, unidentified use of NSAID and poor compliance with medications regimens, incomplete healing of large ulcers, Zollinger-Ellison syndrome and malignant neoplasms.

In NSAID induced ulcers, discontinue NSAIDs or switch to NSAID with less gastric side effects, take NSAIDs after meals. If NSAID cannot be discontinued, give tab. Ranitidine 150 mg twice a day for 8 weeks.

Follow-up

Report to the physician urgently, if vomiting of blood or passage of black tarry stools. Refer to a specialist, if pain becomes continuous, frequent vomiting or symptoms of GI bleed.

Patient education

- Patient should avoid frequent use of unsupervised pain killers. If these are required on long-term basis, a safer drug should be taken in consultation with a doctor.
- Smoking should be stopped.
- There is no role of bland diet or drinking cold milk in the treatment of peptic ulcer.

References

1. Peptic Ulcer Disease and Related Disorders. In: Harrison's Principles of Internal Medicine. Fauci, Braunwald, Kasper et al (eds), 18th Edition, McGraw Hill Company Inc., New York, 2012; pp. 2438-2460.
2. Protocol for Diagnosis and Treatment of Peptic Ulcer. American International Health Alliance (AIHA). http://www.aiha.com accessed on 20.9.12.

VOMITING

Nausea is the unpleasant feeling that one is going to vomit. Vomiting is the forceful expulsion of the gastric contents due to involuntary contraction of abdominal musculature and simultaneous relaxation of gastric fundus and lower oesophageal sphincter. Regurgitation is spitting up of the gastric contents without associated nausea or forceful contraction of abdominal musculature.

Causes of vomiting

(a) Central (due to stimulation of vomiting centre)—neurological diseases, raised intracranial pressure, vestibular system disorders, drugs and toxins, any acute severe pain, toxic or metabolic disorders like ketoacidosis, systemic infections, radiation exposure, pregnancy and psychogenic vomiting.

(b) Peripheral—obstructive lesion of GIT, acute gastritis or gastroenteritis, severe upper GI bleed, etc.

SALIENT FEATURES

- Excessive vomiting causes loss of salt and water and exhaustion while chronic recurrent vomiting prevents eating and causes starvation. Severe nausea and retching may result in upper GI bleed by causing Mallory-Weiss Tear in oesophagus/cardia of stomach.
- A detailed history and clinical examination usually gives a clue to the cause of acute vomiting. For chronic and recurrent vomiting, investigation should be done to exclude a local cause in the GIT, evidence of raised intracranial tension (ICT) or presence of any other neurological condition. Psychogenic vomiting is diagnosed by exclusion of organic causes only.

Treatment

Nonpharmacological

- Acute gastroenteritis is usually self-limiting. Advise the patient to take sips of cold water/ORS.
- Prevent motion sickness by avoiding heavy meal before travel.
- Give rest to the injured part to prevent severe pain.

Pharmacological

Treat the underlying cause (medically or surgically).

Hospitalize the patient to give IV fluids, if dehydrated. Start oral fluids as soon as patient can tolerate. Appropriate analgesics, if patient has severe pain.

- For symptomatic relief:
  In acute vomiting in the absence of obstruction to GIT or other organic cause, give
  Inj. Metoclopramide 10 mg IV and repeat after 6 hours, if needed.
  Or
  Inj. Prochlorperazine 5 mg IM, repeated after 4-6 hours, if needed.
- In patients with recurrent vomiting due to gastroperesis (as in diabetes), non-ulcer dyspepsia, give:
  Tab. Mosapride 5 mg 3 times a day.
  Or
  Tab. Domperidone 10 mg 3 times a day.
  Or
  Tab. Metoclopramide 10 mg 3 times a day.
- To prevent motion sickness, give:
  Tab. Cyclizine 50 mg up to 3 times daily. In children: 6-12 years 25 mg up to 3 times daily to be taken half an hour before starting journey.

Note: In case of vomiting with cytotoxic chemotherapy for cancer patients.
Tab./Inj Ondansetron 8 mg 12 hourly.

Patient education

- Advise the patient to avoid stale food, cut vegetables/fruits kept in open; drink potable water only; not to take drugs like pain killers frequently without consultation with doctor.
- Patient should be encouraged to take small sips of liquids at short intervals to prevent dehydration.

Reference

1. Nausea, Vomiting and Indigestion. In: Harrison's Principles of Internal Medicine. Fauci, Braunwald, Kasper et al (eds), 18th Edition, McGraw Hill Company Inc., New York, 2012; pp. 301-307.

CONSTIPATION

Commonest cause of constipation is habitual, the important contributory factors being insufficient dietary fibre, physical inactivity, suppression of defaecatory urges occurring at inconvenient moments, prolonged travel, etc. Constipation may also occur following an attack of diarrhoea on the day after taking a purgative; this needs no treatment. The important secondary causes may include neurological, hormonal, colonic, malignancy, depression. Secondary causes should be looked for in case of recent onset or constipation of severe symptoms.

SALIENT FEATURES

- Constipation is defined as decrease in frequency and liquidity of stool compared to the normal pattern in a particular individual.
- Important complaints suggesting constipation include straining at defaecation >25% of time, lumpy/hard stools, sensation of incomplete evacuation, or less than 3 bowel actions per week.

Treatment

Acute constipation may be part of a more serious illness such as acute bowel obstruction. In that case, patient has abdominal pain, vomiting and distension and cannot pass even wind (flatus). Immediately refer such cases to a higher centre. Treatment of habitual constipation is discussed as under.

Nonpharmacological

1. Reassurance—since many patients with normal stools and in pregnancy, imagine that they are constipated.

2. High fibre diet and increased intake of fluid with decrease in consumption of caffeinated drinks.
3. Retraining of bowels (avoiding suppression of urge to defaecate, making a regular habit).
4. Bulk forming agents like 'isapghula husk' or 'psyllium seeds' also help to relieve mild constipation.
5. Regular physical exercise such as walk for 1/2 to 1 hour daily and abdominal exercises.

Pharmacological

(Usually required for moderate to severe constipation).

1. Tab Bisacodyl 5-15 mg (1 to 3 tablets) orally once a day, or 10 mg (1 suppository) rectally once a day as needed.
   Or
   Lactulose Soln 15-20 ml orally at night.
   Or
   Liq paraffin 15-20 ml twice or thrice daily.
   Or
   Susp. Magnesium sulphate 15-20 ml at night.
   Or
   Tab. Sodium picosulphate 10 mg at night.
   Or
   Isotonic polyethylene glycol (PEG) electrolyte solution 125-250 ml.
   Any of these may be given 2-4 times a week. Some patients may require treatment for several weeks or months, if there is no improvement.
2. Tab. Mosapride 5 mg 2 or 3 times a day. In some patients may be required for several weeks.
3. Phosphate enemas to be used on as and when required basis in patients having acute problem with severe constipation or sub-acute intestinal obstruction.

Follow-up

- If patient continues to have severe constipation or symptoms worsen, refer the patient to a specialist for investigations to rule out secondary causes.
- Recent unexplained constipation (not acute) in an elderly person whose bowel habits were always regular should be investigated.
- Acute constipation especially when the patient is vomiting and has not passed even wind and appears ill, suspect GIT obstruction and refer immediately to a higher centre.

Patient education

1. Do not use purgative frequently to treat constipation as it may form a habit.
2. Do not use purgatives to treat constipation with fever and following heart attack. A suppository or simple enema is preferred.

3. In pregnancy, ispaghula is preferred.

References

1. Diarrhoea and Constipation. In: In: Harrison's Principles of Internal Medicine. Fauci, Braunwald, Kasper et al (eds), 18th Edition, McGraw Hill Company Inc., New York, 2012; pp 308-319.
2. Medicine International. Jewell DP, Thillainayagam A (eds). The Medicine Publishing Co. Oxford, UK.
(For constipation in children see Chapter-19).

IRRITABLE BOWEL SYNDROME (IBS)

A group of gastrointestinal symptoms associated with lower bowel that occurs in the absence of organic disease.

SALIENT FEATURES

- A positive diagnosis of IBS is made using Rome II criteria: At least 3 months continuous or recurrent symptoms of abdominal pain associated with any 2 of the three features, viz. relief by defaecation and/or onset with change in stool frequency or consistency.
- The supportive symptoms of IBS include passage of mucous, abnormal stool passage (straining, urgency of feeling of incomplete evacuation) and feeling of abdominal fullness. There should be no alarm symptoms like fever, weight loss, bleeding per rectum or anaemia.

Treatment

Nonpharmacological

Diet should contain high fibre and supplemented with bulk forming agents like ispaghula husk; avoid caffeine and alcohol; assess for lactose intolerance; avoid any other dietary constituent which worsens the symptoms. Hypnotherapy and modified form of psychotherapy may reduce symptoms.

Pharmacological

1. Tab. Mebavarine hydrochloride 270 mg 3 times a day given for long-term
   Or
   Tab. Dicyclomine 10 mg 3 times a day
   Or
   Tab. Drotavarine 40-80 mg 3 times a day
   Or
   Tab. Propanthaline hydrochloride 15 mg 3 times a day
2. In individuals complaining of symptoms suggestive of depression
   Tab. Amitriptyline 25 mg at bedtime or 2 times a day

3. In case of severe diarrhoea, if symptoms are not controlled by above drugs, give Tab./Cap. Loperamide hydrochloride 2-4 mg daily for several days/weeks depending upon the clinical response.

This should be considered only as a temporary management. The final goal of treatment is gradual withdrawal of medication with substitution of a high-fibre diet.

Follow-up

Symptoms of IBS are life long but vary in intensity. Pharmacological treatment should be titrated according to the severity of symptoms.

Patient education

- Explain the chronic nature of symptoms.
- Patient should try to find out correlation of symptom with certain food item, especially milk ingestion and should avoid these.
- Stressful situation also worsen symptom. Relaxing exercises like yoga may help.

References

1. Irritable Bowel Syndrome. In: Medicine International. Jewell DP, Thillainaygam A. (eds), Vol. 22, The Medicine Publishing Co. Oxford, UK, 1998; pp 102-104
2. Clinical Approach to Irritable Bowel Syndrome. In: Approach to Patient with Chronic GI Disorders, 1999; pp 323-29.
3. Irritable Bowel Syndrome. In: Harrison's Principles of Internal Medicine. Fauci, Braunwald, Kasper et al (eds), 18th Edition, McGraw Hill Company Inc., New York, 2012; pp 2496-2501.

ACUTE DIARRHOEA/GASTROENTERITIS

It is a self-limiting illness characterized by diarrhoea, abdominal cramps, nausea and vomiting, usually caused by viruses or bacteria (*E. coli*, V. c*holerae*, *Staph. aureus*, *Bacillus cereus,* etc). Most of these are noninvasive or toxic diarrhoea. Less commonly, patients present mainly with diarrhoea with passage of mucous and/or blood in stools. This may be associated with significant systemic symptoms like fever, malaise, etc. These patients are more likely to have invasive diarrhoea caused by the bacteria (*E. coli*, *Shigella*, *Salmonella, Campylobacter*, etc.) or parasite (*Amoeba*).

Treatment

In acute gastroenteritis, dehydration and electrolyte imbalance is the main problem which needs attention and there is no need to go for aetiological diagnosis. Investigations are indicated, if there is bloody diarrhoea, clinical evidence of toxicity or prolonged diarrhoea.

Nonpharmacological

Mainstay of treatment is adequate fluid replacement in any form. To prevent vomiting, patient should be asked to take only sips of fluid. Fluids used at home can be juices,

soups and glucose/electrolyte drinks (oral rehydration solution). Milk and its products should be avoided initially because of secondary lactase deficiency. High fibre diet should be avoided. (For details of management of moderate severe dehydration and electrolyte imbalance see section in Chapters 2 and 19).

Pharmacological

1. **Indicated only in very ill patients with systemic symptoms** associated with bloody diarrhoea, traveller's diarrhoea or in cholera infection Tab. Ciprofloxacin 500 mg 2 times a day for 3-5 days.
2. **In amoebic dysentery**
   Tab. Metronidazole 800 mg 3 times a day for 7 days.
   Or
   Tab. Tinidazole 2 g orally as single dose with food.
   In acute *Giardia* infection
   Tab. Tinidazole 2 g orally as single dose with food
   Or
   Tab. Metronidazole 400 mg 3 times a day for 3 days.

Indications for hospitalization

Patients with clinical signs of dehydration especially young children or elderly, suspected cholera, immunosuppressed patients and those with severe systemic symptoms.

Patient education

- Patients should be instructed to continue taking adequate fluids even if it initially causes slight increase in frequency of stools due to increased gastro-colic reflex.
- They should report to the physician, if they are not able to retain any fluid taken orally and develop significant decrease in urine output.

References

1. Gastroenteritis. In: Management of Common GI Problems. R Guan, J Kang and H Ng (eds), Medimedia Asia Pvt Ltd., Singapore, 1995; pp. 68-75.
2. Diarrhoea and Constipation. In: Harrison's Principles of Internal Medicine. Fauci, Braunwald, Kasper et al (eds), 18th Edition, McGraw Hill Company Inc., New York, 2012; pp. 308-319.

CHRONIC DIARRHOEA

A patient is diagnosed as having chronic diarrhoea, if patient continues to have diarrhoea for more than 2 weeks. The important causes of malabsorption in India include tropical sprue, tuberculosis and chronic pancreatitis. Patient should be investigated by a specialist to diagnose the cause of chronic diarrhoea. Tests for malabsorption include faecal fat excretion study, D-xylose absorption, small bowel contrast studies and mucosal biopsy, structural and functional evaluation of pancreas. Diagnosis of ulcerative colitis is confirmed by colonic endoscopy and mucosal biopsy.

SALIENT FEATURES

- It may be classified as small bowel diarrhoea (bulky, greasy, frothy, foul smelling stools associated with lot of flatulence indicating malabsorption) or large bowel diarrhoea (loose/watery stools mixed with mucous and/or blood—commonly caused by irritable bowel syndrome).

Treatment (to be treated by a specialist)

Can be planned only after a proper diagnosis is made. Use of anticholinergics or nonspecific anti-diarrhoeal agents should be discouraged in the absence of proper diagnosis. Treatment of tropical sprue is discussed as under:

Tropical sprue diagnosis suggested by clinical history, small bowel barium study (mucosal oedema, flocculation and clumping of barium), jejunal mucosal biopsy (reveals varying degree of mucosal atrophy).

Nonpharmacological

To reduce the symptoms of diarrhoea during the initial phase of treatment, advise the patient to avoid fatty food and dairy products and take otherwise a balanced diet. These nutrients should be introduced gradually once the patient has been on regular pharmacological treatment.

Pharmacological

1. Tab. Norfloxacin 400 mg 2 times a day.
   Or
   Tab. Ciprofloxacin 500 mg 2 times a day.
   Or
   Cap. Doxycycline 100 mg 2 times a day.
   Or
   If the above mentioned drugs are contraindicated, Tab. Cotrimoxazole 960 mg 2 times a day.
2. Tab. Folic acid 5 mg 2 times a day.
   The above treatment is given for 3-6 months duration depending upon patient's response. Other minor nutrient supplements are given, if there is evidence of specific deficiency.
3. For anaerobic infections, Tab. Tinidazole 2 g orally as single dose with food.

Patient education

- Well-balanced diet including all major and minor nutrients should be taken.
- Patient should be advised to follow proper hygienic measures regarding eating habits.
- To come back for review, if there is no clinical improvement in 3-4 weeks of treatment.

Reference

1. Disorders of Absorption. In: Harrison's Principles of Internal Medicine. Fauci, Braunwald, Kasper et al (eds), 18th Edition, McGraw Hill Company Inc., New York, 2012; pp. 2460-2476.

ULCERATIVE COLITIS

SALIENT FEATURES

- Patient may present in acute stage with bloody diarrhoea, may be associated with systemic symptoms of low to moderate fever, backache, arthralgias.
- The diagnosis is confirmed by sigmoidoscopic examination and mucosal biopsies.
- The disease almost always involves rectum and rest of the colon may be involved to variable length.
- Acute disease is graded as mild (2-4 stool/day), moderate (4-6 stools/day) or severe (>6 stools/day). During remission, patient may be asymptomatic or may have extraintestinal symptoms.

Treatment

Aim of the treatment is induction of remission in acute stage and then maintenance of remission.

Nonpharmacological

There is no specific dietary restriction but patient may avoid any food, if the patient is uncomfortable.

Pharmacological

A. Mild to moderate acute ulcerative colitis (distal/left colonic involvement)

1. Tab. Sulphasalazine 1 g 3-4 times a day.
   Or
   Tab. Mesalazine 800 mg 3-4 times a day.
   Or
   Tab. Olsalazine 1-3 g/day in divided doses.
2. Prednisolone phosphate enema, 20 mg in 100 ml saline 1-2 time a day.
   Or
   Hydrocortisone enema 100-125 mg in 100 ml saline 1-2 times a day (to be prepared fresh).
   Or
   If disease limited to rectum, Hydrocortisone foam 125 mg 1-2 times a day.

B. Moderate to severe or extensive acute disease

1. Start (1) as above.

2. Tab. Prednisolone 20-60 mg/day in single or divided doses.

Follow-up. If the symptoms do not improve or worsen, hospitalize the patient.

C. Acute severe disease with systemic symptoms (requires hospitalization under the care of specialist)

1. Inj. Hydrocortisone 100 mg IV 4 times a day.
   Or
   Inj. Dexamethasone 4 mg IV 3-4 times a day.
2. Patient should be kept 'nil by mouth' and should be given adequate intravenous fluids and electrolytes.
3. Blood transfusion to be given as per requirement.
4. Patient switched over to oral steroids and amino-salicylates to be started as in A (1) after 5 days, when patient is allowed to take orally.

If patient fails to respond to steroids, refer the patient to gastroenterologist for immunosuppressive therapy or surgery.

Once the remission is induced, steroids are tapered slowly over 4-6 weeks period. For acute attack, there is no use of giving steroids for more than 12 weeks.

Follow-up. Close clinical/biochemical/radiological monitoring is required for any complications like toxic megacolon/perforation.

D. Maintenance of remission

1. Any of the drugs used in A(1) should be given life long.

Patient education

- Patient should be followed up at 6 monthly interval and maintenance treatment should be continued.
- In any patient who has disease for more than 10 years, a regular sigmoidoscopy and rectal biopsy should be done at 6 monthly interval to look for any dysplasia and total colonoscopic examination should be done at 2-3 years interval.
- Patient should be explained about chronic nature of the disease and continuation of maintenance treatment for life long with regular follow-up and risk of colonic cancer after 10 years of onset of disease.

Reference

1. Irritable Bowel Syndrome. In: Harrison's Principles of Internal Medicine. Fauci, Braunwald, Kasper et al (eds), 18th Edition, McGraw Hill Company Inc., New York, 2012; pp. 2496-2501.

AMOEBIC LIVER ABSCESS (ALA)

Liver abscess is the commonest extraintestinal form of amoebiasis, caused by *E. histolytica*. In endemic areas, usually affects young individuals, more commonly chronic alcoholics. Females are only rarely affected.

SALIENT FEATURES

- Acute fever, right upper quadrant abdominal pain which may be dull ache or pleuritic in nature.
- It is less common in elderly and is more likely to be chronic in presentation with low abdominal pain, intermittent fever and general symptoms. Jaundice is uncommon.
- Complications include rupture of abscess into pleural, pericardial or rarely peritoneal cavity.
- Elevated blood counts/ESR/serum alkaline phosphatase, one or more hypoechoeic lesions in liver on ultrasonography and positive test for antibodies to *E. histolytica* in high titre help in the diagnosis. Examination of pus of the parasite is usually negative.

Treatment

Nonpharmacological

Hydrotherapy, if the fever is high.

Pharmacological

1. Tab. Metronidazole 800 mg 3 times a day for 7-10 days
   Or
   Tab. Tinidazole 2 g as a single dose for 7-10 days

In Children, 50 mg/kg (up to 2 g) orally once a day with food for 3-5 days. Close monitoring is recommended, when treatment duration exceeds 3 days.

If patient is very toxic, Inj. Metronidazole 500 mg given 8 hourly until patient improves. Switch over to oral therapy whenever possible.

Indications for aspiration of amoebic liver abscess

1. If doubt about possibility of pyogenic abscess.
2. No improvement with medical–one very close to the surface of liver.
3. Impending rupture of abscess–one very close to the surface of liver.
4. Left lobe abscess if large, to prevent rupture in to pericardium.

Follow-up

- Monitor the patient for resolution of symptoms with medical treatment and aspirate, if any indication.
- Abscess cavity may persist for several weeks even after cure of infection. Therefore, frequent ultrasonographic examinations are un-necessary unless patient develops symptoms; may be repeated after 4-6 weeks after the patient becomes asymptomatic.

- After treatment with Metronidazole, Tab. Diloxanide furoate 500 mg 3 times a day for 1 week may be given, especially, if patient is in nonendemic area.

Patient education

- Avoid taking alcohol specifically on treatment with metronidazole.
- Stress the need for maintaining hygiene regarding food intake to prevent enteric infections.

Reference

1. Amoebiasis and Infection with Free Living Ameba. In: Harrison's Principles of Internal Medicine. Fauci, Braunwald, Kasper et al (eds), 18th Edition, McGraw Hill Company Inc., New York, 2012; pp 1683-1688.

PYOGENIC LIVER ABSCESS

Liver abscesses constitute 48% of all visceral abscesses. Pyogenic abscesses in liver are usually caused by spread of infection from peritoneum, abdominal viscera like appendicitis/diverticulitis/portal pyaemia or disease of biliary tract. It is mostly caused by coliform organisms.

SALIENT FEATURES

- Fever is the commonest symptom, associated with abdominal pain, toxaemia, symptoms of the associated problem like appendicular pain/mass, etc. Mostly abscesses are small and multiple.
- Diagnostic investigations include full blood counts, USG of abdomen, blood culture, examination of pus including culture, CT scan, MRI.

Treatment

Nonpharmacological

- Drainage–percutaneous catheter or open surgical–remains the mainstay of treatment.
- If patient is toxic, should be kept nil by mouth and given IV fluids as per requirement.

Pharmacological

Initial empirical treatment should include broad-spectrum antibiotic(s):

1. Inj. Ceftriaxone 1-2 g IV 2 times a day
2. Inj. Gentamicin 3 mg/kg/day IV in 3 divided doses
3. If source of abscess is intra-abdominal sepsis, Inj. Metronidazole 500 mg IV 3 times a day should be added.

Follow-up

- Monitor for clinical improvement and modify the therapy based on culture sensitivity report.
- Abscess should always be drained.
- Surgery considered, if no improvement with medical treatment and percutaneous drainage in 4-7 days.

Patient education

- Avoid taking alcohol while on treatment with metronidazole.
- Stress the need for maintaining hygiene regarding food intake to prevent enteric infection.

Reference

1. Intra-abdominal Infections and Abscesses. In: Harrison's Principles of Internal Medicine. Fauci, Braunwald, Kasper et al (eds), 18th Edition, McGraw Hill Company Inc., New York, 2012; pp 1077-1083.

ACUTE PANCREATITIS

Acute inflammation of pancreas, usually caused by alcohol or gallstone migrating through the common bile duct. Less commonly caused by trauma, infections like mumps, ascariasis and drugs like diuretic, azathioprine, etc.

SALIENT FEATURES

- Clinically presents as acute onset, constant upper abdominal pain 'penetrating through to the back', may be partially relieved by sitting with trunk flexed and knees drawn up. In severe cases, there is anorectal paralytic ileus, vomiting, abdominal distension, jaundice and fever.
- Diagnosis is made by detection of increased serum amylase, three or more times the normal, in the absence of salivary gland disease, gut perforation or infarction.
- Serum lipase elevation is more specific for pancreatitis. Ultrasonogram or CT scan further help to confirm the diagnosis. Complications include necrosis, haemorrhage, pseudocyst, abscess, pleural effusion, and other end organ failure.

Treatment

In 85-90% case, disease is self-limiting and subsides spontaneously in 3-7 days. There is no proven treatment of acute pancreatitis. Treatment is mainly supportive.

Nonpharmacological

- Send blood for complete blood count, amylase, KFT, LFT, blood sugar, serum triglycerides and arterial blood gases. Repeat the test at 48 hours, early if indicated. Oral intake start after 48-72 hours depending upon appearance of bowel sound and relief in pain.
- Fats should be avoided until acute phase settles.

Pharmacological

The goals of initial management is fluid replacement, electrolyte balance, calorie support and prevention of local and systemic complications.

Prompt transfer to an intensive care unit should take place for sustained organ failure. Transfer to an intensive care unit (or possibly a step-down care unit) should be considered, if there are signs that suggest that the pancreatitis is severe or is likely to be severe.

If no signs of hypovolaemia:

1. Infusion Dextran saline - 1 L
2. Infusion Dextran - 1 L
3. Inj. Potassium chloride (KCl) 60-80 mmol (20 mmol added to 50 ml of IV fluid)
4. If signs of hypovolaemia: Add polymer from degradad gelatin 500-1000 ml.
5. Nasogastric tube aspiration—if evidence of paralytic ileus, abdominal distension and vomiting.
6. Inj. Diclofenac sodium 75 mg IM 2-3 times a day.
7. If pain is not relieved, Inj. Tramadol 50 mg IM, repeated 6-8 hourly, if needed. Patient with severe necrotizing pancreatitis (as diagnosed by contrast enhanced CT) should be managed by a specialist.
8. Enteral nutrition. Parenteral nutrition is rarely indicated. The route of nutritional support must be tailored to the individual patient, and modified depending on the patient's response and tolerance.

Use of prophylactic antibiotics to prevent pancreatic infection is not recommended.

Sterile necrosis is best managed medically during the first 2-3 weeks. In case of infected necrosis, CT-guided percutaneous aspiration with Gram's stain and culture is recommended, when infected necrosis is suspected. Treatment of choice in infected necrosis is surgical debridement. Alternative minimally invasive approaches may be used in selected circumstances.

Patient education

- Avoid alcohol, avoid fatty food and explain the patient about need of early gallbladder removal in patients with gallstone.

References

1. Approach to the Patient with Pancreatic Disease. In: Harrison's Principles of Internal Medicine. Fauci, Braunwald, Kasper et al (eds), 18th Edition, McGraw Hill Company Inc., New York, 2012; pp. 2629-2633.
2. Acute and Chronic Pancreatitis. In: Harrison's Principles of Internal Medicine. Fauci, Braunwald, Kasper et al (eds), 18th Edition, McGraw Hill Company Inc., New York, 2012; pp. 2634-2649.
3. Peter A. Banks, Martin L. Freeman, and the Practice Parameters Committee of the American College of Gastroenterology. Practice Guidelines in Acute Pancreatitis. Am J Gastroenterol 2006;101:2379–2400

CHRONIC PANCREATITIS

Usually caused by chronic alcohol consumption or possibly malnutrition in tropics.

SALIENT FEATURES

- Characterized by chronic diarrhoea due to malabsorption, upper abdominal pain and diabetes mellitus.
- Diagnosis confirmed by pancreatic function tests, ERCP or MR pancreatography.

Treatment

Nonpharmacological

Alcohol should be stopped. Dietary modification includes use of 'coconut oil' as the source of fat, restriction of sugars/refined carbohydrates, if patient has impaired glucose tolerance.

Pharmacological

Aim is to supplement pancreatic lipase during meals (30,000 IU lipase required with each meal)

1. Cap. Pancreatin 170 mg, 2 capsules to be taken during the meal and 2 capsules after the meal.
2. Cap. Omeprazole 20 mg twice a day to be taken 30 min before meals.
   Or
   Cap. Lansoprazole 30 mg twice a day.
   Or
   Tab. Pantoprazole 40 mg twice a day.
3. Tab. Diclofenac 50 mg to be taken as and when required for pain.
   Or
   Tab Tramodol 50 mg twice a day.

4. If diabetes not controlled with diet, for drug therapy (see section on Diabetes Mellitus).

Patient education

- Patient should be regularly followed up for appearance of any specific nutrient deficiency, especially deficiency of fat-soluble vitamins and adequate supplements should be given, if required.
- Patient should be explained about giving up alcohol and may require behavioural therapy.

Reference

1. Acute and Chronic Pancreatitis. In: Harrison's Principles of Internal Medicine. Fauci, Braunwald, Kasper et al (eds), 18th Edition, McGraw Hill Company Inc., New York, 2012; pp. 2634-2649.

GASTROINTESTINAL (GI) BLEEDING

Gastrointestinal (GI) bleed may present as occult or overt bleed. Upper GI bleed is defined as bleeding from any site from pharynx to duodenojejunal (DJ) flexure or more specifically up to ligament of Trietz and usually presents as haematemesis or melaena (black, tarry, sticky, foul smelling stools). Bleeding from GIT distal to DJ flexure is called lower GI bleed. Presence of identifiable fresh/altered blood in stool is called haematochezia. Minimum of 60 ml of blood is required in the stomach to produce melaena. Black stools may be seen in patients taking iron, charcoal or bismuth salts.

SALIENT FEATURES

- Occult or overt bleed or fresh blood.
- For diagnosis of GI bleed, need clinical history, examination and radiological/endoscopic examination.
- Active bleed is indicated by presence of fresh blood in vomitus, nasogastric tube aspirate, melaena, passage of fresh blood in stool.

Treatment

Acute GI bleed is an emergency and needs active management. An assessment of activity and severity of bleed should be done immediately.

Nonpharmacological

- Maintain vital signs (blood pressure, airways, respiration, temperature).
- Insert a large bore IV cannula and send the blood samples for Hb, TLC, platelets, coagulation profile, renal and liver function tests, blood grouping and cross-matching.

- Start IV fluids like normal saline/ Ringer's lactate/ polymer from degraded Gelatin.
- Severity of GI bleed is assessed as mild (patient has tachycardia but blood pressure is maintained), moderate (tachycardia with postural hypotension, tachypnoea, sweating, cold skin) and severe (hypotension and shock).
- Replace blood as soon as available, if moderate to severe bleed or active bleed.

Pharmacological

1. Inj. Ranitidine 300 mg IV infusion/24 hours started, if non-variceal upper GI bleed suspected (patient with known peptic ulcer or reflux disease, taking NSAIDs).
2. If variceal bleed is suspected (chronic alcoholic, jaundice, splenomegaly, dilated abdominal veins, ascites, encephalopathy);
   Inj. Octreotide 50 mcg IV immediately followed by 25 mcg/hour infusion.
   Or
   Inj. Terlipressin 1-2 mg IV given 4-6 hourly.
   Or
   Inj. Vasopressin 20 IU in 200 ml of normal saline over 20 min.
   Maintenance dose is given as 100 units in 50 ml of 5% dextrose given as 0.2-0.9 units/min (6-27 ml/h) in the next 24 hours; avoid in ischaemic heart disease (IHD). Nitroglycerine drip can also be used along with this, if systolic BP is >90 mmHg.
3. In patients with major peptic ulcer bleeding (active bleeding or non-bleeding visible vessel) following endoscopic haemostatic therapy, Inj. Omeprazole or Pantoprazole 80 mg IV bolus followed by 8 mg/hour infusion for 72 hours).

Follow-up

Monitor pulse, blood pressure, urine output and severity and activity of bleed. Presence of identifiable blood/clots per rectum in a patient with upper GI bleed indicates a severe ongoing bleed and need for very active management.

Transfer patient urgently (after starting the above treatment) to a higher centre for further investigations and treatment, if uncontrolled bleed, severe bleed, poor urine output and shock (see also Shock).

References

1. Gastrointestinal Bleeding. In: Harrison's Principles of Internal Medicine. Fauci, Braunwald, Kasper et al (eds), 18th Edition, McGraw Hill Company Inc., New York, 2012; pp. 320-323.
2. Management of Acute Upper and Lower Gastrointestinal Bleeding. Scottish Intercollegiate Guidelines Network (SIGN) 2008.