Al-Maarif University	Clinical Pharmacy-I	4th Stage	College of Pharmacy

Irritable Bowel Syndrome, Dyspepsia & Haemorrhoids

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Lecture No. 5

Irritable Bowel Syndrome: Background

- Irritable bowel syndrome (IBS) is one of the most common GI tract conditions seen in primary care.
- It can be defined as a functional bowel disorder (i.e., absence of abnormality) in which abdominal pain and bloating are associated with a change in bowel habits.
- The diagnosis is suggested by the presence of long-standing colonic symptoms, without any deterioration in the patient's general health.

Prevalence and Epidemiology

- Adult prevalence rates in Western countries are reported to be between 10% and 20% and has been increasing.
- Approximately twice as many women than men are affected.
- It most commonly affects people between 20 and 30 years old, and onset after the age of 50 years is unusual.

Aetiology

- There are no specific **anatomical**, **biochemical** or **microbiological** factors to explain the aetiology of IBS, but it is now clearly understood to be **multifactorial**.
- Many factors can contribute to disease expression and include
  1. **Motility dysfunction,**
  2. **Diet**
  3. **Genetics**
- In a small proportion of cases, symptoms appear after **bacterial gastroenteritis**.

Aetiology

- **Psychological factors** also influence symptom, and some studies have shown that patients who suffer from higher levels of stress or depression experience worse symptoms compared with other patients.
- Flare-up of symptoms has also been associated with periods of increased stress.
- Excessive para-sympathomimetic activity might be associated with IBS.

Questions to ask patients with IBS

Age:

- IBS usually affects people **under 45 years**.
- Special care is required if **bowel symptoms for the first time**, as **organic bowel disease is more common after 45**.

Periodicity:

- IBS is episodic, with **periods of wellness** between symptom **bouts**.
- Symptoms can **trace back many years**, even to childhood.

Presence of abdominal pain:

- IBS pain is varied, ranging from **localized and sharp to diffuse aching**.
- Change in **pain nature or severity** requires further evaluation.

Location of pain:

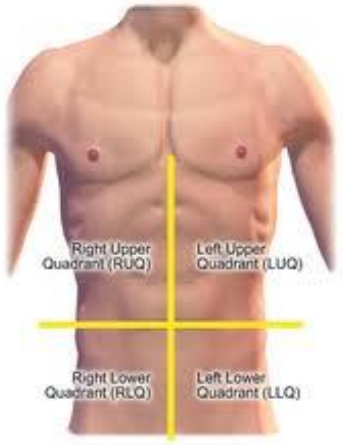
- Typically located in the **left lower quadrant**.

Diarrhea and constipation:

- Patients with IBS may **not fit textbook definitions** of these symptoms.
- **Constipation-predominant IBS** is more common in women.

Clinical Features of Irritable Bowel Syndrome

- IBS is characterized by abdominal pain or discomfort, located especially in the left lower quadrant of the abdomen, which is often relieved by defecation or the passage of wind.
- Constipation or diarrhoea, with associated bloating is also normally present.
- People with IBS can present with 'diarrhoea-predominant', 'constipation-predominant', or alternating symptom profiles.
- Diarrhoea on awakening and shortly after meals is also observed in many patients.

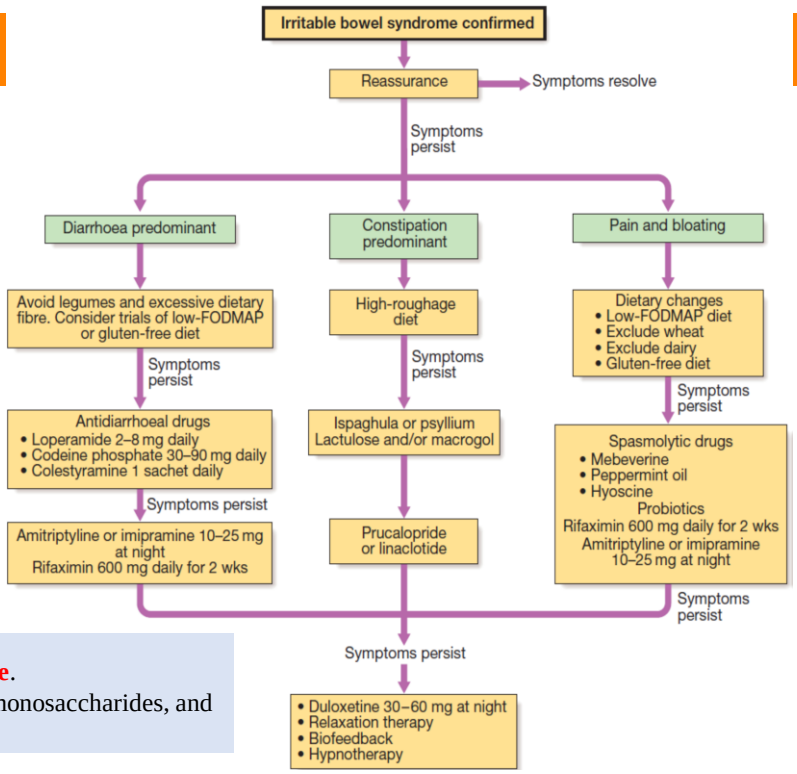


Abdominopelvic Quadrants

Education, Support, Diet and Lifestyle

- Before medicines are recommended, it might be useful to discuss if stress is a factor and if this can be avoided.
- In addition, dietary modification has shown to be effective for some patients.
  1. Have regular meals and avoid missing meals.
  2. Drink at least eight cups of fluid per day, especially non-caffeinated drinks.
  3. Reduce intake of alcohol and fizzy drinks.
  4. Consider limiting intake of high-fibre food.
  5. Reduce intake of so-called resistant starch often found in processed or recooked foods.
  6. Limit fresh fruit to three portions per day.
- If diet is deemed a major contributor towards symptoms, food avoidance can be tried. Suspected food products must be excluded from the diet for a minimum of 2 weeks and then gradually reintroduced to determine whether the food item triggers symptoms.

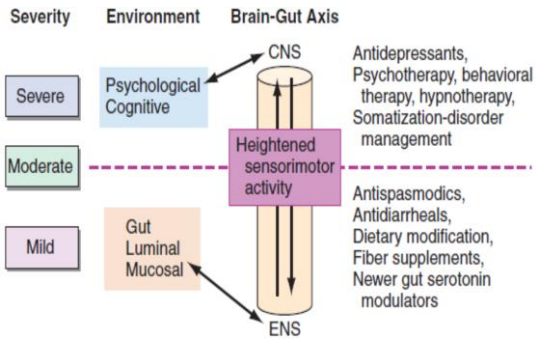
Drug treatment for IBS is usually directed at the most predominant symptom



Management of irritable bowel syndrome.
•(FODMAP = fermentable oligo-, di- and monosaccharides, and polyols)

Therapeutic targets for irritable bowel syndrome

- **Mild to moderate symptoms** usually have intermittent symptoms that correlate with altered gut physiology.
  - Treatments include gut-acting pharmacologic agents such as antispasmodics, antidiarrheals, fiber supplements, and serotonin modulators.
- **Severe symptoms** usually have constant pain and psychosocial difficulties.
  - This group of patients is best managed with antidepressants and other psychosocial treatments.



- CNS, central nervous system; ENS, enteric nervous system.

Antispasmodic Agents:

- **Hyoscine N-butyl bromide (Buscopan®)**
- **Mechanism of Action:**
- It works by **blocking muscarinic receptors** in the smooth muscles of the gastrointestinal tract, biliary system, and urinary tract.
- This leads to **muscle relaxation and reduces spasms or contractions**.
- It is primarily used for the relief of smooth muscle spasms in conditions such as irritable bowel syndrome (IBS) and other spastic conditions of the gastrointestinal tract.

Hyoscine N-butyl bromide (Buscopan®)

❑Administrations

- The recommended dose for :
- **Adult**: **10 mg TID**; increased if necessary up to **20 mg QID**.
- Take it **30 minutes before eating** for patients with postprandial pain.
- Buscopan **can be given to children over the age of 6** (one tablet, TID).
- Hyoscine may intensify the adverse effects of other antimuscarinic drugs, such as:
  - ✓Oxybutynin or Amitriptyline,haloperidol.

❑Side Effects:

1. Dry mouth
2. Blurred vision
3. Constipation
4. Urinary retention
5. Rarely, tachycardia

❑Precautions:

1. Glaucoma
2. Prostate hypertrophy (urinary retentions)
3. Myasthenia gravis due to the risk of worsening muscle weakness.

Antispasmodic Agents: Mebeverine

- Mebeverine hydrochloride have a direct relaxation effect on the smooth muscle cell , by **blocking K+, Na+, and Ca2+ channels**.
- It reducing abdominal pain.
- It decreasing gastrointestinal motility and preventing spasms without affecting normal bowel movements.
- **Adult dose**: **135 mg TID**, 20 minutes **before meals**.
- The drug should not be used for pregnant or breastfeeding women, and children under 18 years of age or for patients with **porphyria**.
- It is associated with very few **Side Effects** such as Angioedema . face oedema . skin reactions.

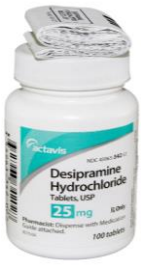
Probiotics

- Probiotics are preparations of live bacteria and yeasts taken as **yoghurt or food supplements** and are thought to have the potential to **restore the balance of gut bacteria** so that the gut functions more effectively.
- Probiotics, such as *Lactobacillus* and *Bifidobacterium*, have also been promoted for IBS.
- A systematic review suggested **probiotics significantly improved IBS** symptoms, and there was no **apparent difference across the probiotics**.
- Dietetic Association recommended that although probiotics are **unlikely to provide substantial benefits**, if individuals choose to try them, they should try one at a time and for a minimum of 4 weeks before switching or stopping.

FODMAPs

- There is some evidence **that a diet low in FODMAPs can help some people with IBS**.
- FODMAPs are poorly absorbed simple and complex sugars that are found in some fruits and vegetables, milk and wheat.
- They are **fermented** by bacteria in the colon, **releasing gas** that it is thought **stretches** the bowel causing **bloating**, **wind** and **pain** in those susceptible to IBS.

Antidepressants: Tricyclic Antidepressants



- The tricyclic antidepressants (TCAs) appear to be efficacious in IBS but might improve global well-being more than symptoms.
- The **recommended Dose to** start it at a **low dose** (e.g., 10-25 mg of desipramine or nortriptyline once daily at bedtime) and increase the dose by 10 mg weekly, aiming for 50 mg initially.
- Many patients do not require full antidepressant dosing unless comorbid depression is present.

- TCAs tend to be **constipating**, and therefore they may be of most benefit in **IBS-D**.
- **Adverse effects**
- Including drowsiness, dizziness, and dry mouth,
- Up to 40% discontinue use or change therapy because of **intolerance**.

Antidepressants: Selective Serotonin Reuptake Inhibitors

- The selective serotonin reuptake inhibitors (SSRIs) cause fewer side effects than the TCAs, and a meta-analysis has reported a global benefit of SSRIs.
- A recent trial conducted among non-depressed IBS patients reported no benefit.
- It is possible that SSRIs may be more **beneficial in IBS-C** because they accelerate small intestinal transit time.

Complementary therapies

- Studies have shown that **hypnotherapy** may be of benefit in IBS. If patients want to try this, they should consult a registered hypnotherapist.
- A systematic review of **biofeedback** concluded that there is **insufficient evidence** to warrant recommendation, but that given the positive results reported in small trials to date, biofeedback deserves further study in people with IBS.
- Others may benefit from **traditional acupuncture**, **reflexology**, **aromatherapy** or **homoeopathy**, although NICE specifically advises that use of acupuncture and reflexology should not be encouraged.

Dyspepsia: Background, Prevalence and Epidemiology

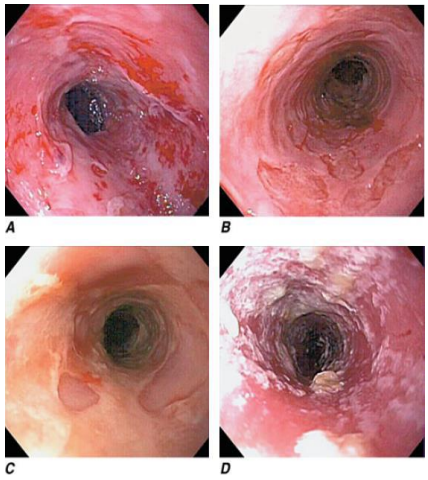
- **Heartburn** is a form of **indigestion**, or **dyspepsia**, which is also more formally known as **gastro-oesophageal reflux disease** (GORD).
- Symptoms are caused when there is **reflux** of **gastric contents**, particularly acid, into the **oesophagus**, which **irritates** the sensitive mucosal surface (**oesophagitis**).
- Patients will often describe a **burning discomfort/pain** felt in the stomach, passing upwards behind the breast bone (retrosternal).

Dyspepsia: Background, Prevalence and Epidemiology

- **Dyspepsia** refer to a group of **upper abdominal symptoms:**
  1. Functional dyspepsia, non-ulcer dyspepsia (indigestion)
  2. Gastro-oesophageal reflux disease (GORD, heartburn)
  3. Gastritis
  4. Duodenal ulcers
  5. Gastric ulcers
- Between **25% and 40%** of the general population in the West are reported to suffer from dyspepsia symptoms each year.
- **Prevalence** increases with age and has been reported to be higher in women than in men.

Etiology

- **Decreased muscle tone** leads to lower oesophageal sphincter **incompetence** (often as a result of medicines or overeating) and is the principal cause of GORD.
- **Increased acid production** results in **inflammation** of the stomach (gastritis)
- The presence of ***H. pylori*** is central to **duodenal** (95%) and **gastric** (80%) ulceration.
- If no specific cause identified is called **functional dyspepsia** and is thought to be **multifactorial**.



Specific questions to ask a patient experiencing dyspepsia:

Age:	• **Patients over 50 years**, the likelihood of an underlying pathology increases.
Location:	• Dyspepsia **pain** is generally **non-localized**; if the patient can pinpoint the location, **it's likely not dyspepsia**.
Nature of pain:	• If the pain is **sharp**, or **stabbing**, it may indicate an **ulcer**.
Radiation:	• Pain radiating to other body areas could indicate serious conditions
Severity:	• **Severe** pain needs further investigation to rule out serious conditions.
Associated symptoms:	• Persistent **vomiting**, especially if **bloody**, or **black/tarry stools** suggest **ulceration** or **bleeding** and require **referral**.
Aggravating or relieving factors:	• Pain occurring 1–3 hours after eating and relieved by food or antacids suggests an **ulcer**.
Social history:	• Excessive eating habits, such as eating too quickly, can contribute to dyspepsia. A patient's lifestyle can provide insights.
Risk factors for GORD :	• **Stress, smoking, obesity**, and medications that reduce lower oesophageal sphincter tone increase GORD risk.

Clinical Features of Dyspepsia

- Patients with dyspepsia present with the following:

1. **Vague abdominal discomfort** (aching) above the umbilicus associated with belching
2. **Bloating**
3. **Flatulence**
4. **A feeling of fullness**
5. **Nausea and/or vomiting**
6. **Heartburn**

Treatment: General Measures

- Before treatment is initiated, lifestyle advice should be given where appropriate.
- **Recommendations should include the following**:

1. Change diet to a lower fat diet.
2. Keep alcohol intake to recommended levels.
3. Stop smoking.
4. Decrease weight.
5. Reduce caffeine intake.

- It might also be possible to identify factors that precipitate or worsen symptoms.
- Commonly implicated foods that precipitate dyspepsia are spicy or fatty foods, caffeine, chocolate and alcohol. Bending is also said to worsen symptoms.

Treatment

- **Antacids**

- Most antacids marketed are combination products. The rationale for combining different salts:
- **First**, to ensure the product has **quick onset** (containing sodium or calcium) and a **long duration of action** (containing aluminium or calcium).
- **Second**, to **minimize any side effects**

- For example, **magnesium** salts tend to cause **diarrhoea**, and **aluminium** salts tend to cause **constipation**; however, if both are combined in the same product, neither side effect is noticed.
- Antacids can affect the absorption of a number of medications via the mechanisms of **chelation** and adsorption. Most of these interactions are easily overcome **by leaving a minimum gap of 1 hour** between the respective doses of each medicine.

Treatment

- **Alginates**
- When in **contact** with gastric acid, the **alginate precipitates out**, forming a **spongelike** matrix that **floats** on top of the stomach contents.
- Products containing alginates (e.g., Gaviscon) are combination preparations that contain an alginate with antacids.
- They are best given **after each main meal and before bedtime**, although they can be taken on an as-needed basis.
- They can be given during pregnancy and breastfeeding.

Treatment

- **H2-antagonists**
- Ranitidine 150 mg BID, cimetidine 200 mg QID , famotidine 20mg BID, and nizatidine 150mg BID, are **H2 receptor antagonists**.
- H2-antagonists work by **binding** to H2 receptors on the **parietal cells** of the stomach lining. By blocking these receptors, **H2-antagonists reduce both the volume and the acidity of stomach secretions**
- It possesses **no clinically** important drug **interactions**, and **side effects** are rare.
- Evidence suggests that it can be used in **pregnancy and breastfeeding**.

Treatment

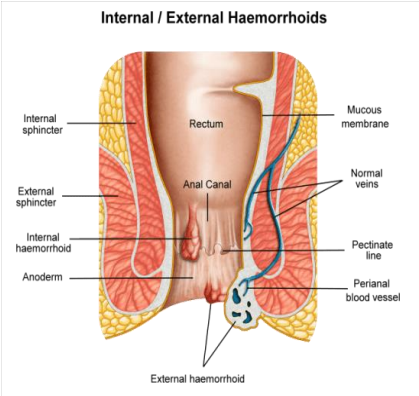
- **Proton Pump Inhibitors**
- Omeprazole, esomeprazole, lansoprazole, rabeprazole, and pantoprazole are **covalently bind and irreversibly inhibit H+,K+-ATPase.** Thereby, causing marked reduction in gastric acid production from parietal cells.
- PPIs maintain an **intragastric pH greater than 4** from **10 to 14 hours** daily compared with approximately **6 to 8 hours** daily with the H2RAs.
- PPIs are well tolerated, with **headaches and diarrhea** the most common side effects.
- Omeprazole **decreases** the clearance of diazepam, warfarin, and clopidogrel owing to competition for the cytochrome P450 isoenzyme P2C19.

Side effects

1. Vitamin B12 Deficiency
2. Magnesium Deficiency
3. Impaired Calcium Absorption
4. Increased Risk of Osteoporosis-related Fractures
5. Clostridium difficile (C. diff) Infection
6. Acute Interstitial Nephritis (AIN)
7. Chronic Kidney Disease (CKD)
8. Potential Increased Risk of Heart Attack
9. Interaction with Clopidogrel
10. Rebound Acid Hypersecretion

Haemorrhoids

- **Haemorrhoids** (known as **piles**) can produce symptoms of:
  - ✓Itching,
  - ✓burning,
  - ✓pain,
  - ✓swelling and
  - ✓discomfort in the perianal area and anal canal
  - ✓rectal bleeding.
- They are swollen vascular cushions, which protrude into the anal canal (**internal piles**) and may swell and hang down outside the anus (**external piles**)



Haemorrhoids

- They are often **caused** or **exacerbated** by **inadequate dietary** fibre or **fluid intake**.
- Careful questioning is essential to differentiate between this minor condition and others that may be potentially more serious.
- It is an embarrassing subject and consultations require privacy.

Prevalence and epidemiology

- It is very common.
- **One in two people will experience at least one episode** at some point during their lives.
- Haemorrhoids can **occur at any age** but are **rare** in **children and adults younger than 20 years**.
- It affects both sexes equally and **is more common with increasing age**, especially in people **from 45 to 65 years**.
- There is a high incidence of haemorrhoids in **pregnant women**.

Etiology

- The cause of haemorrhoids is probably **multifactorial**, with

1. **Anatomical (degeneration of elastic tissue),**
2. **Physiological (increased anal canal pressure) and**
3. **Mechanical (straining at stool).**

Specific questions to ask patients with hemorrhoids

- **Duration**:
  - Symptoms that have been **constant for more than 3 weeks** require a referral.
- **Pain**:
  - Pain often occurs during defecation but may also be present when sitting.
  - It is usually a dull ache, but **sharp pain during defecation** may suggest an anal fissure.
- **Rectal Bleeding require referral** :
  - Slight bleeding is common with hemorrhoids
  - Large volumes of blood or bleeding unrelated to defecation need referral.
- **Associated Symptoms**:
  - Hemorrhoids may cause localized symptoms, such as anal itching.
  - Symptoms like nausea, vomiting, loss of appetite, or changes in bowel habits could indicate underlying pathology and require referral.
- **Diet**:
  - A diet low in fiber can lead to constipation, contributing to hemorrhoids.
  - Hard stools and straining can exacerbate the condition, making it important to assess the patient's diet and bowel habits.

• Clinical features of haemorrhoids

- **Bright red painless rectal bleeding** is the most common symptom.
- **Itching** and **irritation** are also commonly observed.
- Symptoms are often **intermittent**, and each **episode** usually lasts from a few days to a few weeks.
- **Internal haemorrhoids are rarely painful**, whereas external haemorrhoids can cause **pain** due to the cushion becoming thrombosed.
- Pain is described as **a dull ache** that increases in severity when the patient defecates, leading to patients ignoring the urge to defecate.
- This can then lead to **constipation**, which in turn will lead to more difficulty in passing stools and further increase the pain associated with defecation.

Conservative management

- Ideally, the patient should **avoid straining at stool**, and aim to pass a firm, soft motion daily.
- **A bulk laxative**, together with advice on an **adequate fluid intake**, are often required.
- Numerous combination products are marketed for the relief and treatment of haemorrhoids. These include a wide range of therapeutic agents and commonly include:
  - **Anaesthetics, astringents, anti-inflammatories and protectorants.**

Anaesthetics & Antiinflammatory drugs

- **Local anaesthetic drugs** act by causing a reversible block to conduction along nerve fibres.
- **Lidocaine hydrochloride** is effectively absorbed from mucous membranes and is a useful surface anaesthetic in concentrations up to 10%.
- Their action is **short-lived and will produce temporary relief from perianal itching and pain**.
- **Steroids** (e.g., Hydrocortisone) have proven effectiveness in reducing inflammation and would therefore be useful in reducing haemorrhoidal swelling.

Astringents & protectorants

- **Astringents** (e.g. **bismuth, zinc, & Peru balsam**) are included in haemorrhoid preparations on the theoretical basis that **they precipitate surface proteins**, thus producing a **protective coat over the haemorrhoid**. However, there are no evidence to support this theory.
- **Protectorants** (e.g., **shark liver oil**) are claimed to provide a protective coating over the skin and thus produce temporary relief from pain and itch. Any benefit conveyed by a protectorant is probably a **placebo effect**.

Sclerotherapy

- This is suitable for first (grade I) - and second – degree piles; **2 – 3 mL of 5% phenol in almond oil** (**or arachis oil**) is injected above each pile as a sclerosing injection. (The phenol sterilizes the oil, which is the main sclerosant.)
- Because the injection is placed high in the anal canal above the dentate line, it is **painless**.
- One or more repeat injections may be required at **monthly intervals**.

Banding

- Application of a small **O-ring rubber band** to areas of protruding mucosa results in **strangulation of the mucosa**, which **falls away after a few days**.
- It can be successfully applied to first - , second - and third - degree piles, but care must be taken to position **the bands above the dentate line**.

Haemorrhoidectomy

- The indications for **haemorrhoidectomy** include:

1. **Third- and fourth-degree** haemorrhoids;
2. **Second-degree haemorrhoids** that have not been cured by non-operative treatments;
3. **Fibrosed** haemorrhoids;
4. **Interno-external haemorrhoids** when the external haemorrhoid is well defined.

Haemorrhoidectomy

- Haemorrhoidectomy can be performed using an **open or a closed technique**.
- The **open technique** is most commonly used in the UK.
- The **closed technique** is the popular technique in the USA.
- Both involve **ligation and excision of the haemorrhoid**, but in the open technique the anal mucosa and skin are left open to heal by secondary intention, and in the closed technique the wound is sutured.

Thank you