



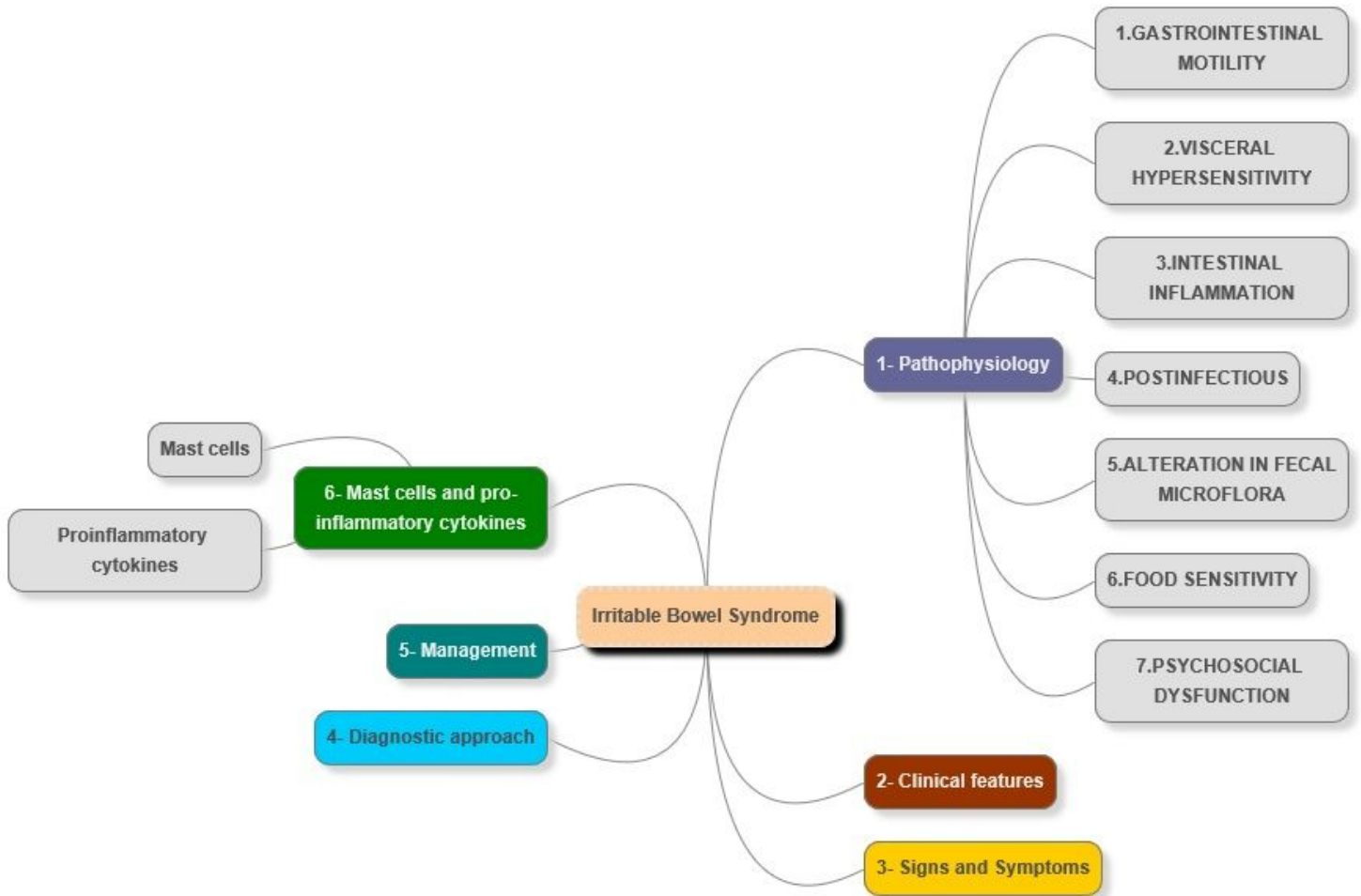
Irritable Bowel Syndrome



Lecture Objectives:

- Understand the hypothesis explaining the pathophysiology of IBS.
- Common sign and symptoms.
- Rome III criteria of diagnosis.
- Introduction to management of IBS.

Mind Map



Irritable bowel syndrome (IBS):

Is a gastrointestinal disorder characterized by chronic abdominal pain and altered bowel habits in the **absence** of any organic cause. (when we investigate we will find nothing)

- It is the most commonly diagnosed gastrointestinal condition. (70%)
- The pathophysiology of IBS remains **uncertain**. (it is different among people)
- It is viewed as a disorder resulting from an interaction among a number of factors. **(multifactorial)**

Pathophysiology:

1.GASTROINTESTINAL MOTILITY:

Motor abnormalities of the GI tract are detectable in some patients with IBS.

Abnormalities observed include:

1. Increased frequency and irregularity of luminal contractions.
2. Prolonged transit time in constipation-predominant IBS.

2.VISCERAL HYPERSENSITIVITY:

- Visceral hypersensitivity (**increased sensation in response to stimuli**) is a frequent finding in IBS patients.
- Perception in the gastrointestinal (GI) tract results from stimulation of various receptors in the gut wall.
- These receptors transmit signals via ⇒ afferent neural pathways to ⇒ the dorsal horn of the spinal cord and ⇒ ultimately to the brain

Examples are as shown below:

<u>Distention:</u>	<u>Bloating :</u>
Various studies have shown that in patients with IBS, awareness and pain caused by balloon distention in the intestine are experienced at lower balloon volumes compared with controls	About half of patients with IBS (mainly those with constipation) have a measurable increase in abdominal girth associated with bloating (sensation of abdominal fullness)

It is **unclear whether heightened sensitivity of the intestines to normal sensations is mediated by the local GI nervous system, by central modulation from the brain, or by some combination of the two.

3. INTESTINAL INFLAMMATION

- Increased numbers of **lymphocytes** have been reported in the colon and small intestine in patients with IBS .
- increase in lymphocyte infiltration in the myenteric plexus in nine patients and **neuron degeneration** in six patients .
- These cells release mediators (**nitric oxide, histamine and proteases**) capable of ⇒ stimulating the enteric nervous system ⇒ abnormal motor and visceral responses within the intestine

4. ALTERATION IN FECAL MICROFLORA

1. Change in gut microbiota: (normal flora)

Emerging data suggest that the fecal microbiota in individuals with IBS differ from healthy controls and varies with the predominant symptom

2. Bacterial Overgrowth

(either probiotics: taking the bacteria itself and eating them prebiotics: taking food that promotes the growth of bacteria)

5. POSTINFECTIOUS

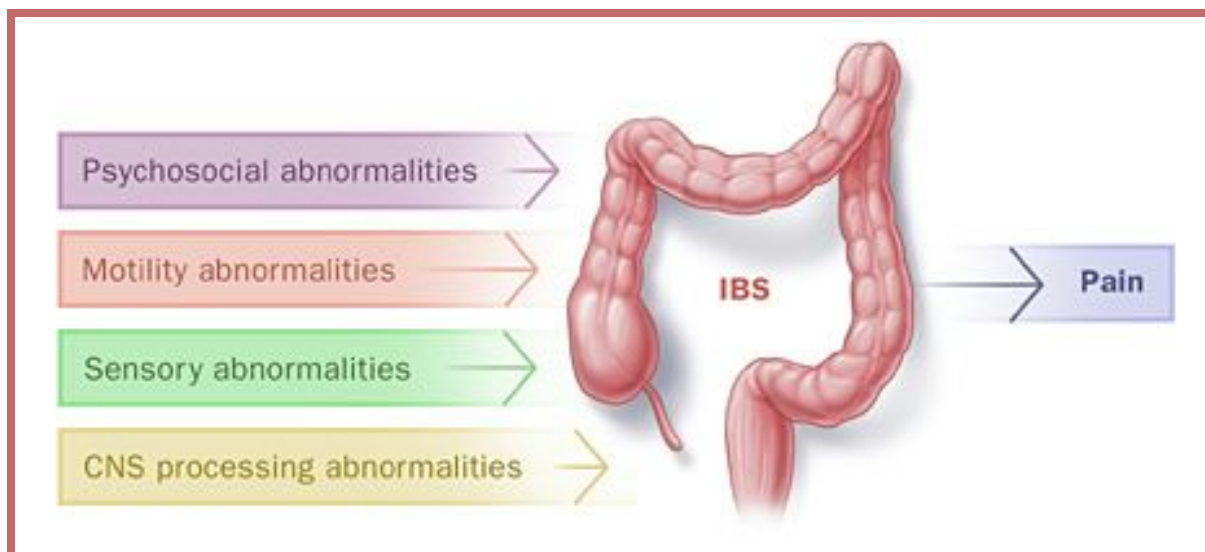
after being infected by a microbe, they will develop IBS

6. FOOD SENSITIVITY

The notion of food allergy in irritable bowel syndrome (IBS) is not new. However, recent evidence suggests significant reduction in IBS symptom severity in patients on elimination diets, provided that dietary elimination is based on foods against which the individual had raised IgG antibodies

7. PSYCHOSOCIAL DYSFUNCTION

Psychosocial factors may **influence** the expression of IBS.



Clinical features

1. younger patients and women are more likely to be diagnosed with IBS.
2. (2:1) female predominance in North America.
3. In china male are more common to have IBS

Signs and Symptoms

1. **Chronic abdominal Pain**
2. Altered bowel habits
3. Diarrhea
4. Constipation
5. Others (Gastroesophageal reflux, dyspepsia, early satiety, nausea and noncardiac chest pain)

Subtypes of IBS

	<u>1-IBS with constipation: The easiest type to treat</u>	<u>2-IBS with diarrhea</u>	<u>3-Mixed IBS</u>	<u>4-Un-subtypes IBS</u>
Hard or Lumpy percentage in bowl movement	≥25%	<5%	≥25 %	Insufficient abnormality of stool consistency to meet the other subtypes.
Loose or Watery percentage in bowl movement	<25%.	≥25%	≥25%	

Diagnostic approach

1-Diagnostic criteria (Rome III criteria) :

Recurrent abdominal pain or discomfort at least 3 days per month in the last 3 months associated with 2 or more of the following:

- I. **Improvement** with defecation.
- II. Onset associated with a change **in frequency** of stool.
- III. Onset associated with a change **in form** (appearance) of stool.

2-Patients are identified as having a symptom complex compatible with IBS based upon the Rome III criteria.

3- Routine laboratory studies (complete blood count, chemistries) are normal in IBS.

4- NO red flag symptoms: (Rectal bleeding , Nocturnal or progressive abdominal pain , Weight loss)

Weight loss, Abdominal pain, Rectal bleeding

Mnemonic: (WAR), if present you need to investigate..



(NOTE: Red flag symptoms predict malignancies)

(iBS does not start in old age, usually in young age if patient is 40 then this isn't IBS. lower or upper bleeding isn't IBS, IBS does not cause bleeding, IBS won't cause significant weight loss and won't wake them up from sleep)

Management

- IBS is a chronic condition with no known cure.
 - The focus of treatment should be on relief of symptoms and in addressing the patient's concerns.
1. Therapeutic relationship
 2. Patient education
 3. Dietary **modification**
 4. Psychosocial therapies
 5. Medications: Antidepressant medication (the **SSRI** is the best)

Mast cells and pro-inflammatory cytokines

	Mast cells	Proinflammatory cytokines
What are they..?	Effector cells of the immune system.	Proteins that are mediators of immune responses.
The role in IBS..?	<p>1. An increased number of mast cells has been demonstrated in the terminal ileum, jejunum, and colon of IBS patients.</p> <hr/> <p>2. Studies have demonstrated a correlation between abdominal pain in IBS and the presence of activated mast cells in proximity to colonic nerves.</p>	<p>Elevated levels of plasma proinflammatory interleukins have been observed in patients with IBS.</p> <hr/> <p>In addition, peripheral blood mononuclear cells of IBS patients produce higher amounts of tumor necrosis factor than healthy control.</p>



MCQs

- 1) Irritable bowel syndrome is most common in elderly males.
 - a) True.
 - b) False.
- 2) Once other disease conditions have been ruled out, a person can be considered for the diagnosis of irritable bowel syndrome if the symptoms were present for the last-?
 - a) One week.
 - b) Two week.
 - c) One month.
 - d) Three months.
- 3) The abdominal pain in patients with irritable bowel syndrome worsens after bowel movement (defecation).
 - a) True.
 - b) False.
- 4) Foods that could worsen symptoms of irritable bowel syndrome include-?
 - a) High fat food.
 - b) Excessive caffeine or alcohol.
 - c) Milk product.
 - d) All of them.
- 5) People with irritable bowel syndrome may suffer either from?
 - a) Constipation.
 - b) Diarrhea .
 - c) Both.
 - d) Nether.
- 6) IBS associated with ..?
 - a) Improvement with defecation .
 - b) Change in frequency of stool .
 - c) Change in form of stool .
 - d) All of them.

1)B 2)D 3)B 4)D 5)C 6)D

SAQs

A 34-year-old mother of 3 presents to her family physician with a 3-week history of abdominal cramping pain in both lower quadrants. She has been having frequent small, soft stools accompanied by some mucus but no blood. Her symptoms are improved with bowel movement or passage of flatus. She has had these symptoms almost monthly since she was in college, but they have been worse recently. Past history is negative except for 3 normal pregnancies. Family history is negative for colon cancer. A sister has similar symptoms but has not seen a physician. Personal/social history reveals that she is an accountant working long hours. Her firm is about to merge with another, and she fears her job situation is tenuous. Review of systems is otherwise negative. She has not lost any weight or had any other constitutional symptoms. On physical examination, the only finding is some mild tenderness in the RLQ. No mass is felt

What is your diagnosis ?

Irritable bowel syndrome (IBS)

What is the most important factor affecting her symptoms?

Psychosocial factor

A 40-year-old housewife complains of recurrent constipation. She has had problems since her 20s, but they are worse now. The constipation is accompanied by abdominal bloating and abdominal pain, and the discomfort is only better when she has a bowel movement. On her gynaecologist's advice, she has tried more fibre in her diet, including fresh fruits and leafy vegetables, but that has only made the bloating worse. Her past history includes a cholecystectomy and a hysterectomy. Physical examination is entirely normal. Rectal examination reveals normal consistency stool. Stool samples test negative for occult blood.

What is the most likely pathogenesis of this case ?

Abnormal gastrointestinal motility

What is your goal management?

To relieve her symptoms either by :

Therapeutic relationship Patient education Dietary modification Psychosocial therapies

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