IRRITABLE BOWEL SYNDROME

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Success is no accident. It is hard work,
perseverance, learning, studying, sacrifice and most of all,
love of what you are doing or learning to do.

Color code
- Important
- doctor notes
- Notes/extra explanation

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OBJECTIVES:

By the end of the lecture you should able to:

1) Understand the hypothesis explain the pathophysiology of IBS.

2) Common sign and symptoms

3) Rome III criteria of diagnosis

4) Introduction to management of IBS

IRRITABLE BOWEL SYNDROME (IBS)

- IBS is a gastrointestinal disorder characterized by chronic abdominal pain and altered bowel habits in the absence of any organic cause. All organic investigations are negative (blood tests and endoscopy are negative) There is no specific marker for IBS until now.

- It is the most commonly diagnosed gastrointestinal condition. 70% of patients who go to the primary clinics because of abdominal pains.

- It is viewed as a disorder resulting from an interaction among a number of factors some people their main problem is in the motility, & others their main problem is in food allergy.

بالعربي اسمه" :القولون العصبي "الحقيقة انه قد يصيب أي مكان من الجهاز الهضمي، كذلك العصبي لا يعني آنه يصيب الشخص العصبي آو الحزين بل يدل عل زيادة حساسيه الأعصاب المحيطة.

SUBTYPES OF IBS

IBS with constipation:

hard or lumpy stools ≥25 percent / loose or watery stools <25 percent of bowel movement

IBS with diarrhea:

loose or water stools ≥25 percent / hard or lumpy stools <5 percent of bowl movements

Mixed IBS:

hard or lumpy stools ≥25 percent / loose or watery stools ≥25 percent of bowel movements

Unsubtyped IBS:

insufficient abnormality of stool consistency to meet the above subtypes

PATHOPHYSIOLOGY OF IBS

- The pathophysiology of IBS remains uncertain.

Gastrointestinal motility:

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

Abnormalities observed include:

increased frequency and irregularity of luminal contractions diarrhea

prolonged transit time in constipation-predominant IBS

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

Notes :

- People with IBS are more sensitive for gases than the normal ones. It means that IBS patients have the same amount of gases of normal people but their sensitivity to these gases is more.
- In IBS the GUT is thought to be more sensitive to any stimuli; although this stimuli is not irritating in normal conditions.
- How we detect Visceral Hypersensitivity?
  1. distention
  2. Bloating
- A shape study is performed for IBS PT; The shape study consist of a capsule taken by patient, each capsule contains 24 markers then we take an X-ray.
- The shape study is commonly used to measure colonic transit with a radiopaque marker. It is recommended for any patient with constipation (major symptom).
- Note that the rectal distention by retained stools can slow colonic transit, and severely constipated patients should have laxatives &, or enemas to empty the colon **before** a study of transit.
- We give the patient the capsule 5 days before the X ray.
- In the X ray we see where did this shape stopped & know exactly where the hypo-hypermotility happen.
- Hypo= constipation while hyper = diarrhea.
- We may do the X- ray daily (we do this usually for research not clinically).

PATHOPHYSIOLOGY OF IBS

Intestinal inflammation: some patient and not all of them

Lymphocytes -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, leading to abnormal motor and visceral responses within the intestine.

IBS is considered an inflammatory disorder although the cause isn't always post-inflammatory

Alteration in fecal microflora (normal flora):

Change in gut microbiota: emerging data suggest that the fecal microbiota in individuals with IBS differ from healthy controls and varies with the predominant symptom

Bacterial overgrowth

Any disease of the GIT has an association with it, and it is responsible for its immunity.

Probiotics: Bacterial flora.

Prebiotics: Food that promotes the growth of the probiotics.

There is a study that have been done on mice proves that some bacteria can make people obese!

Notes :

- Microbiota and the bacteria in the GUT can play a major role in our health, as an example obesity.
- People who have different Microbiota are at higher risk to develop IBS and/ or obesity.
- When we examine patient with IBS and IBD, some bacteria will be increased in IBS and decreased in IBD.
- For the obesity they did a study in mice, they toke a bacteria from obese mouse and they give it to a normal mouse. Then they were given the same food, and both developed obesity.

- يعني اخذوا عينة من فار حامل للبكتيريا وحقنوها في فار سليم، واعطوهم نفس الاكل كلهم سمنوا نفس الشيء حتى الفار السليم لانه صار حامل للبكتيريا
- اشربوا لبن اكتيفيا او فيتال كويس يساعد في التخلص من البكتيريا الضارة واستبدالها بالنافعة بالتالي الشعور بالراحة

PATHOPHYSIOLOGY OF IBS

Distention:

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

In IBS, the small balloon will cause severe pain, so it's not related to the balloon's size, its related to the sensitivity of the GUT itself (important)

Bloating :

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.

Both bloating and distension cause discomfort, and pain, and have a negative impact on the quality of life for some individuals. The symptoms may be linked with other gas related complaints, such as burping, swallowing air, and passing intestinal gas.

Gas level in IBS is normal or even less than normal, yet it causes severe pain.

Post infectious

A study in Walkerton, Ontario showed that post infections had a little impact on IBS pathophysiology

Let's assume that there is a patient who had severe gastroenteritis. It is possible that he/she may suffer IBS symptoms after the infection for 6 weeks period and IBS symptoms will disappear, but some of them will develop chronic IBS.

Food sensitivity

Very common, and even siblings have different foods sensitivity.

Antigen level are increased afetr a heavy meal (not due to allergy)

Psychological dysfunction:

Psychosocial factors may influence the expression of IBS. Stress exacerbates the symptoms (nerves hyper-sensitivity)

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CLINICAL FEATURES

- nger patients and women are more likely to be diagnosed with IBS.
- 2:1 female predominance in North America
- china male are more common to have IBS 1:1 male to female

Chronic abdominal pain

Altered bowel habits

It can be changing between constipation and diarrhea in the same patient

Signs and symptoms

Diarrhea and constipation

Upper gastrointestinal symptoms

gastroesophageal reflux, dysphagia, early satiety (feel full quickly while eating), intermittent dyspepsia, nausea, and non-cardiac chest pain, are common in patients with IBS

Other gastrointestinal symptoms

DIAGNOSTIC APPROACH

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

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

NO red flag symptoms:

1) Rectal bleeding
2) Nocturnal or progressive abdominal pain
3) Weight loss (significant 10% in the last 6 months)

Not all patients should undergo further investigations but usually we have to investigate patients older than 40 years old because usually they don't have IBS but at they end they may have it.

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:

1) Improvement with defecation
2) Onset associated with a change in frequency of stool
3) Onset associated with a change in form (appearance) of stool

The symptoms may disappear and reoccur

What is deferent between rome III and IV criteria?
Almost the same thing but the main deference are:
Rome 3: 3 day/month
Rome 4: 1 day/ week
Rome 3: Improvement with defecation
Rome 4: maybe Improvement with defecation and may get worse.
(Important)

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.

Antispasmodic: Pain. Constipation: Fibers. Diarrhea: Loperamide.

Treatment include: Important

1) Therapeutic relationship the physician should inform the patient not to expect any cure but the patient should control the symptoms and increases the quality of life.

2) Patient education To ensure them there is no complication and do not worry

3) Dietary modification Avoid the trigger

4) Psychosocial therapies

5) Medications: Antidepressant medication (the last choice, only if all the previous ways failed to improve their symptoms. Ensure the patient that he/she don't have depression but the perception of this drug is in order to decrease neuronal sensitivity in their gut.

SUMMARY

Definition	It is a gastrointestinal disorder characterized by chronic abdominal pain and altered bowel habits in the absence of any organic cause
Pathophysiology	1. GASTROINTESTINAL MOTILITY: Motor abnormalities of the GI tract include: i. increased frequency and irregularity of luminal contractions ii. prolonged transit time in constipation-predominant IBS 1. VISCERAL HYPERSENSITIVITY: distention and bloating 2. INTESTINAL INFLAMMATION: Increased numbers of lymphocytes in the colon and small intestine. 3. ALTERATION IN FECAL MICROFLORA(Change in gut microbiota - bacterial overgrowth) 4. POSTINFECTIOUS 5. FOOD SENSITIVITY 6. PSYCHOSOCIAL DYSFUNCTION
Clinical features	Younger patients and women are more likely to be diagnosed with IBS.
Signs and symptoms	• Chronic abdominal pain • Altered bowel habits • Diarrhea • Constipation • Upper gastrointestinal symptoms: gastroesophageal reflux, dysphagia, early satiety, intermittent dyspepsia, nausea, and non-cardiac chest pain, are common in patients with IBS
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: • Improvement with defecation • Onset associated with a change in frequency of stool • Onset associated with a change in form (appearance) of stool

Subtypes	• **IBS with constipation** - **hard or lumpy stools ≥25 percent / loose or watery stools <25 percent of bowel movements** • **IBS with diarrhea:** - **loose or water stools ≥25 percent / hard or lumpy stools <5 percent of bowel movements** • **Mixed IBS** - **hard or lumpy stools ≥25 percent / loose or watery stools ≥25 percent of bowel movements** • **Unsubtyped IBS** - **insufficient abnormality of stool consistency to meet the above subtypes**
Diagnostic approach	• Patients are identified as having a symptom complex compatible with IBS based upon the Rome III criteria • Routine laboratory studies (complete blood count, chemistries) are normal in IBS. • NO red flag symptoms: -Rectal bleeding -Nocturnal or progressive abdominal pain -Weight loss
Management	It has no known cure but 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

MCQs:

Check your understanding

1-Which one of the following is the most commonly diagnosed gastrointestinal condition:

A-IBD

B-IBS

C- Colitis

D- Pancreatitis

2- Which one of the following in not a symptom of IBS:

A-Diarrhea

B- Dyspepsia

C- Constipation

D- Rectal bleeding

3-In china female are more common to have IBS than male:

A-True

B-False

4-Which CRITERIA is used in diagnosis for IBS:

A- Rome I criteria

B-Rome II criteria

C-Rome III criteria

D-Rome IIII criteria

5-Which one of the following is not considered as red flag symptom :

A-Rectal bleeding

B- Bloating

C-Progressive abdominal pain

D-Weight loss

6- Increased numbers of which one of the following cells have been reported in the colon and small intestine in patients with IBS:

A-Macrophages

B-Monocytes

C-Lymphocytes

D- Neutrophils

7- Which one of the following used to manage the symptoms for a patient with IBS:

A-Dietary modification

B-Antidepressant medication

C-Psychosocial therapies

D-All of the above

Answers:
1-B
2-D
3-B
4-C
5-B
6-C
7-D

Leaders :

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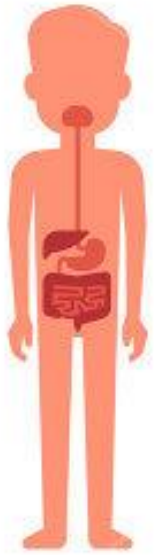

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References : Girls & boys slides

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Videos:

https://www.youtube.com/watch?v=9f5wxYW0Z3k https://www.youtube.com/watch?v=eKLqFnAmK6c