IRRITABLE BOWEL SYNDROME

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THE ROME III. CLASSIFICATION

- A. FUNCTIONAL ESOPHAGEAL DISORDERS
- B. FUNCTIONAL GASTRODUODENAL DISORDERS
- C. FUNCTIONAL BOWEL DISORDERS
- D. FUNCTIONAL ABDOMINAL PAIN SYNDROME
- E. FUNCTIONAL GALL BLADDER AND SPHINCTER ODDI DISORDERS
- F. FUNCTIONAL ANORECTAL DISORDERS
- G. FUNCTIONAL DISORDERS IN NEWBONS AND INFANTS
- H. FUNCTIONAL DISORDERS IN CHILDREN
FUNCTIONAL BOWEL DISEASE

- C1. Irritable bowel syndrome
- C2. Functional distension
- C2. Functional constipation
- C3. Functional diarrhea
- C4. Other not specific functional bowel disorders

CLINICAL FEATURES

- Complains: Altered bowel habits
- Abdominal pain

- Absence of detectable structural abnormalities
- Young patient (<45)
- Female/mail=2-3/1
- 80% of the population severe IBS:
  - Female
CLINICAL FEATURES

Altered bowel habits: Constipation Diarrhea

Abdominal pain:
- Variable intensity: mild—interfere with daily activity
- Location: Hypogastrium, right side, left side, epigastrium
- Episodic, crampy (constant)
- Exacerbated by eating emotional stress flatus or stool

ROME CRITERIA FOR THE DIAGNOSIS OF IBS

- **Abdominal pain/discomfort**
  Relieved With defecation and/or
  With change in stool frequency and/or
  With change in stool consistency
- **Two or more at least 25% of the time**
  change in stool frequency
  change in stool consistency
difficult stool passage
  sense of incomplete evacuation
  presence of mucus in stool
Symptoms>3 month
ALTERED BOWEL HABITS

- Constipation alternating with diarrhea (one predominant)
- Constipation: episodic→continous
  - Stools: hard, narrowed caliber
    (dehydration, retention, spasm)
  - Incomplete evacuation
- Diarrhea: Small volumes
  Mucus
Never at night, No blood

GAS AND FLATULENCE

Abdominal distention, belching or flatulence
- Larger amount of gas?
  impaired transit of gas→retention
- Reduced tolerance
PATHOPHYSIOLOGY

Poorly understood

Motor activity
Unstimulated conditions: norm.
Stimulated conditions: abnormal.
  - increased recto sigmoid motor activity after eating
  - provocative stimuli → exaggerated colonic motor responses

(inflation of rectal balloons → contractile activity↑)

PATHOPHYSIOLOGY

- Exaggerated sensory
  - Visceral stimulation
    Postprandial pain (food into the cecum)
    Rectal balloon inflation → sensations

Visceral afferent dysfunction
  Increased organ sensitivity
  (mechanoreceptor activated stimuli)
  Spinal hyperexcitability
  Cortical modulation
THE ROLE OF CENTRAL NERVOUS SYSTEM

Emotional disorders (stress) → Symptome exacerbation

Therapeutic response

PET: Increase of blood flow in different cortical region

ABNORMALPSYCHIATRIC FEATURES

- 80% of IBS
- No single psychiatric diagnosis
PATHOPHYSIOLOGY

- Increased motor reactivity
- Altered visceral sensation
- Lowered sensation thresholds
- Cortical pain modulation

Enteric nervous system dysregulation

APPROACH TO THE PATIENT

Dg: - Clinical features
- Exclusion of other organic disease

No progression
No fever
No weight loss
Norm amount of stool
No evidence of blood in stool
No nocturnal diarrhea
No steatorrheal stool
Stress, emotional upset → symptoms
DIFFERENTIAL DIAGNOSIS

- **Abdominal pain**
  - Biliary tract disease, peptic ulcer, ischemia, cc, diverticular disease, IBD
  - Acute intermittent porphyria

- **Pain, bloating, vomiting**
  - Intest. obstruction, inf. Giardia

- **Diarrhea**
  - Lactase deficiency, laxative abuse, malabsorbtion, hyperthyroidism, IBD, infection.

- **Constipation**
  - Drugs: antichol, antihypertensive, antidepr.
  - Endocr: hypothy, hypoparathy.

DIAGNOSIS

- **Typical symptoms**
- **Exclusion diseases with similar symptoms**
  - Certain tests: complete blood count, sedimentation, sigmoidoscopy, stool (blood, parasites)
  - >40 years: Ba enema or colonoscopy
  - Lactase deficiency: H2 breath test, lactose free diet
TREATMENT

- Diet
  - Avoid obvious food (Coffee, disacharides, legumes, cabbage)
  - Stool bulking agents – fiber (bran, hydrophilic colloid)

  Effection: - speeds colonic transit (delay)
  - binds water -- excessive hydration or dehydration
  - visceral afferent function

  20%: aggravates bloating and distension

TREATMENT

- Antispasmodics
  - Relax the smooth muscle of the gut
  - Reduce its contractility

  1. Anticholinergic drugs: -
     - global improvement (62%)
     - pain reduction (64%)
     - inhibit gastrocolic reflex

  *Natural belladonna alkaloids*
  
  Side effect: Xerostomia urinary hesitancy, retention, blurred vision, drowsiness
  
  *Synthetic anticholinergics:* fewer side effects (dicyclomine)
TREATMENT

Anticholinergics combined with Sedatives
(Benzodiazepine or barbiturate)
-Reduction of the CNS component of intestinal contractility
-Reduction of the intestinal motor response

TREATMENT

- Antidiarrheal agents
  - Paregoric, codeine, tincture of opium - addiction
  - diphenoxylate- less addictive

Before anticipated stressful events
TREATMENT

■ Drug antidepressants
  – Tricyclic antidepressants:
    slow jejunal migrating motor complex transit propagation,
    delay whole gut transit
    (Stool frequency, pain, depression)
    Motor inhibitory effect?
    Alter visceral afferent neural function?
    Newer selective serotonin reuptake inhibitors less effective

TREATMENT

■ Serotonin-3 receptor antagonists
  – S3 receptor activitation:
    intestinal motility↑
    secretion ↑
    sensation ↑

  ALOSETRON
  Side effect: ischemic colitis (1/700)

■ Serotonin-4 receptor agonists
  – S4 receptor activation: prokinetic effect
  TEGASEROD
TREATMENT

- **Future directions**
  - Modification of release of pain inducing mediators in the gut wall
  - Blockade of peripheral afferent nerve receptors
  - Inhibition of afferent transmission
  - Modification of afferent activity in the CNS

DIVERTICULAR DISEASE

- **Congenital or acquired, small or large intestine**
- **Small intestinal diverticula**
  - **Duodenum**: medial surface of the second portion no symptoms
    - rarely: acute divertulitis (abdominal pain, fever, GI bleeding, perforation)
    - Periampullary divert: Cholangitis, pancreatitis
  - **Jejunum**: less common, inflammation
    - bleeding, perforation, peritonitis
    - Bacterial overgrowth.→malabsorption
DIVERTICULAR DISEASE

- **Meckel’s diverticulum**
  - Persistent omphalomesenteric duct
  - Within 100cm of ileocecal valve
    - Ileal, gastric, colonic mucosa
  - Complications: hemorrhage (peptic ulcer) mimic acute appendicitis mechanical obstruction (intussusception)

DIVERTICULAR DISEASE

- **Colonic diverticula**
  herniations of the mucosa through the muscularis at the point of nutrient artery penetrates
  - Loc: sigmoid colon (decrease in frequency in the prox. colon)
  - Increase with age (20-50% over age 50)
  - Exact mech.: unknown
    - Increase in intraluminal pressure
    - Thickening of the mucosal coat (contractions)
    - Deficient in dietary fiber: fecal bulk↓, narrowing of colon
DIVERTICULAR DISEASE

■ Colonic diverticula
  – **Signs:** usually asymptomatic (incidental finding)
  – **Complications:** hemorrhage (colon cc must be excluded)
    inflammation

DIVERTICULITIS

■ Inflammation in or around of the diverticular sac
■ Retention of undigested food residue and bacteria (fecalith) → hampers blood supply → invasion of bacteria → intramural or pericolic abscess → peritonitis, stricture

■ **Acute colonic diverticulitis:**
  – Fever, left lower quadrant abd. pain, peritoneal irritation, bleeding
  – **Dg:**
    No sigmoidoscopy
    No barium enema increased pressure lead to rupture
DIVERTICULITIS

**Treatment**

- **Acute diverticulitis:**
  - bowel rest, i.v. fluids
  - broad spectrum antibiotics
- **Repeated attacks:**
  - Intermittent antibiotic therapy (norfloxacin, ciprofloxacin, rifaximin)
  - Mesalazin
  - Surgical resection