Definition of FGID

Chronic and recurrent symptoms of the gastrointestinal (GI) tract:
- pain
- nausea
- vomiting
- bloating
- diarrhea
- constipation...

Without detectable structural or biochemical abnormalities
Classification

FGIDs (classified by anatomic region)

(A) Esophageal
(B) Gastroduodenal (B1: FD)
(C) Bowel (C1: IBS)
(D) Functional abdominal pain
(E) Biliary
(F) Anorectal.
Common Features of FGIDs

1. Pathophysiology

2. Role of psychosocial factors

3. The treatment strategy
1. Pathophysiology

1) Abnormal motility
2) Visceral hypersensitivity
3) Inflammation
4) Brain-gut interactions
5) Brain-gut peptides:
   5-hydroxytryptamine 5-羟色胺
   enkephalins 脑啡肽,
   substance P, p-物质
   calcitonin gene related polypeptide 降钙素,
   cholecystokinin 缩胆囊素
2. Role of psychosocial factors

1) Psychological stress exacerbates GI symptoms.

2) Psychological disturbances modify the experience of illness and illness behaviors such as health care seeking.

3) Psychosocial factors affect health status and clinical outcome.
FGID—biopsychosocial model

Early life
- Genetics
- Environment

Psychosocial factors
- Life stress
- Psychologic state
- Coping
- Social support

CNS | ENS

Physiology
- Motility
- Sensation

FGID
- Symptoms
- Behavior

Outcome
- Medications
- MD visits
- Daily function
- Quality of life
3. Treatment Strategy

1) General treatment approach
   - establish therapeutic relationship
   - education and reassurance
   - dietary and lifestyle modifications

2) Pharmacological therapies
   - symptomatic treatment
   - antidepressant

3) Psychological therapies
   - cognitive-behavioral treatment
   - hypnosis
Functional dyspepsia (FD)
Definition

Persistent or recurrent pain or discomfort centered in the upper abdomen:

including pain, early satiety, nausea, vomiting, abdominal distension, bloating, and anorexia

Evidence of organic disease likely to explain the symptoms is absent.
Pathophysiological mechanisms

1. Gastrointestinal motor abnormalities
2. Altered visceral sensation
3. Psychosocial factors
4. Helicobacter pylori infection ?
Sensory Inhibition
Sensitivity

Putative Pathogenesis of Dyspepsia

Stress

Increased Sensitivity

Increased Afferent Activity

Low Grade Inflammation ± HP Infection

ANS Imbalance
Sensory Inhibition

Sensitivity

Impaired Motor Activity

Accommodation

Altered Motor & Sensory Function

DYSPEPSIA
1. Alterations in Motility

- Delayed emptying
- Impaired accommodation to a meal
- Antral hypomotility
- Gastric dysrhythmias
- Altered duodenojejunal motility
2. Altered visceral sensation

- Hypersensitivity to gastric balloon distention: suggesting abnormal afferent function

- Reflex hyporeactivity: suggesting either abnormal afferent or abnormal efferent function
3. Psychosocial factors

- The personality profile impacts on patients with functional dyspepsia.
- Higher levels of anxiety and depression have been found.
- A link between childhood abuse and functional gastrointestinal disorders.
4. *Helicobacter pylori* infection?

Strictly controlled studies have failed to identify any real relationship between *Helicobacter pylori* infection and FD.
Clinical Features

Dyspepsia:
- Pain or Discomfort centered in the upper abdomen
- The symptoms may be intermittent or continuous, and may or may not be related to meals.
Definitions of the symptom

**Pain:** a subjective, unpleasant sensation

**Discomfort:** a subjective, unpleasant sensation or feeling that is not interpreted as pain according to the patient, including upper abdominal fullness, early satiety, bloating, or nausea

centered in the upper abdomen: the pain or discomfort is mainly in or around the midline
Dyspepsia subgroup classification

- based on the predominant single symptom

1. Ulcer-like dyspepsia
2. Dysmotility-like dyspepsia
3. Unspecified (non-specific) dyspepsia
1. Ulcer-like dyspepsia

Pain centered in the upper abdomen is the predominant (most bothersome) symptom.
2. Dysmotility-like dyspepsia

An unpleasant or troublesome non-painful sensation (discomfort) centered in the upper abdomen is the predominant symptom; this sensation may be characterized by or associated with upper abdominal fullness, early satiety, bloating, or nausea.
3. Non-specific dyspepsia

Symptomatic patients whose symptoms do not fulfill the criteria for ulcer-like or dysmotility-like dyspepsia.
Diagnosis

**Rome II Criteria:**

At least 12 weeks, which need not be consecutive, within the preceding 12 months of:

1. Persistent or recurrent dyspepsia (pain or discomfort centered in the upper abdomen);
Diagnosis

Rome II Criteria:

2. No evidence of organic disease (including at upper endoscopy) that is likely to explain the symptoms;
Diagnosis

Rome II Criteria:

3. No evidence that dyspepsia is exclusively relieved by defecation or associated with the onset of a change in stool frequency or stool form (i.e., not irritable bowel).
Diagnostic process

FD remains a diagnosis of exclusion:

- Careful history and physical examination
- Upper endoscopy is necessary
- The others: exclusion of

  - chronic peptic ulcer disease,
  - gastroesophageal reflux disease,
  - esophagitis,
  - pancreatico-biliary disease
  - malignancy
Upper GI symptoms

- Gastro-esophageal reflux disease

Lower GI symptoms

- Irritable bowel syndrome

Dyspepsia

Uninvestigated

Investigated

- Organic disease
  - Ulcer-like (predominant pain)
- Functional
  - Dysmotility-like (predominant non-painful symptom)
Major Causes of Dyspepsia

- Williams 1988 (n=1386)
- Stanghellini 1996 (n=1057)
- Heikkinen (n=766)

% of Patients with Diagnosis

- Gastric Cancer
- Peptic Ulcer
- Esophagitis/GERD
- Functional Dyspepsia
Differential Diagnosis

**GERD:**

- Heartburn is the predominant symptom
- Upper endoscopy
- Prolonged esophageal pH monitoring
- Twenty-four hour esophageal pH monitoring
Differential Diagnosis

- **IBS**: overlap symptom
  co-exist with FD
Treatment

- The goal is to accept, diminish, and cope with symptoms rather than eliminate them.
- The most important aspects include explanation that the symptoms are not imaginary, evaluation of relevant psychosocial factors, and dietary advice.
Pharmacological therapies

- H. pylori therapy ? controversial
- Acid suppression and prokinetic agents (digestive agents) ? may help
- Gut analgesics ? Relaxants of the nervous system of the gut may be beneficial
- Antidepressant? May help
Management of Ulcer-like Functional Dyspepsia

Ulcer-like Symptoms Dominant

Education/lifestyle modification

Test *Hp*

- +

- Eradicate *Hp*

- Reassess

- Success

- Failure

- Trial of acid suppression

- Trial of prokinetic

- Investigate
Management of Dysmotility-like Functional Dyspepsia

Dysmotility-like Symptoms Dominant

Educate/lifestyle modification

Trial of prokinetic medication

Success
- Continue with cyclic therapy

Failure
- Investigate
  - Test H. pylori
    - + Eradicate
      - Success
      - Failure
    - - Consider H₂ antagonists, tricyclics

Gastroscopy or UGI
Irritable bowel syndrome (IBS)
Definition

- Irritable bowel syndrome (IBS) is a functional GI disorder characterized by abdominal pain or discomfort and altered bowel habits.
- In the absence of demonstrable organic disease.
Pathophysiological mechanisms

1. Altered gut reactivity (motility, secretion) in response to luminal (e.g., meals, gut distention, inflammation, bacterial factors) or provocative environmental stimuli (psychosocial stress), resulting in symptoms of diarrhea and/or constipation.
Pathophysiological mechanisms

2 A hypersensitive gut with enhanced visceral perception and pain
Pathophysiological mechanisms

3 Dysregulation of the brain-gut axis, possibly associated with greater stress-reactivity and altered perception and/or modulation of visceral afferent signals
Pathophysiological mechanisms

4 Inflammation: gut inflammatory and immune factors persisting following infection or inflammation of the bowel
Pathophysiological mechanisms

5 Autonomic dysfunction: the role of autonomic dysfunction in IBS requires further evaluation
Role of psychosocial factors

1) Psychological stress exacerbates GI symptoms.

2) Psychological disturbances modify the experience of illness and illness behaviors such as health care seeking.

3) Psychosocial factors affect health status and clinical outcome.
Possible causes of IBS
The biopsychosocial model of IBS
Nerve cell communication in the wall of the colon
Clinical Features

Abdominal discomfort or pain is associated with defecation or a change in bowel function and with features of disordered defecation.
Clinical Features

Classifying IBS patients based on their symptomatology:

1. Diarrhea-predominant pattern:
   IBS associated with abdominal discomfort, fecal urgency, and diarrhea
Clinical Features

2. Constipation - predominant pattern:

IBS associated with abdominal discomfort, bloating, and constipation
Clinical Features

3. Mixed pattern:

IBS alternating between diarrhea and constipation
Symptoms and signs

- Chronic fatigue syndrome
- Sleep disturbances
- Post-traumatic stress disorder
- Temporomandibular joint syndrome
- Fibromyalgia
- Myalgia
- Headache
- Sicca syndrome
- "Lump" or "closing" of the throat
- Swallowing difficulties
- Chest pain
- Nausea
- Dyspepsia
- Heartburn
- Back pain
- Chronic pelvic pain
- Bloating
- Abdominal distention
- Sexual dysfunction
- Urinary urgency
- Interstitial cystitis
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<th>1型</th>
<th>分散的硬块，类似坚果，难以通过</th>
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<td>呈腊肠状但为多块</td>
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<tr>
<td></td>
<td>3型</td>
<td>呈腊肠状但在其表面有裂缝</td>
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<td></td>
<td>4型</td>
<td>呈腊肠状或蛇状，表面光滑且软</td>
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<td>5型</td>
<td>软的团块有清楚的边缘（易于通过）</td>
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<td></td>
<td>6型</td>
<td>绒毛片状且有碎边，软糊状粪便</td>
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Diagnosis

Rome II Criteria

patients must have the following continuous or recurrent symptoms for at least 12 weeks of abdominal pain or discomfort characterized by the following:

- Relieved by defecation
- Associated with a change in stool frequency
- Associated with a change in stool consistency
Figure 8. Key steps in the diagnosis of IBS.
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- **Symptom assessment**
  - Rome criteria

- **Symptom assessment**
  - Hematology, chemistry, erythrocyte sedimentation rate (ESR),
  - thyroid stimulating hormone
  - Stool for ova and parasites,
  - Flexible sigmoidoscopy ± barium enema or colonoscopy if >50 years

- **Initiate treatment**

- **Reassess after 3-6 weeks of treatment**
Treatment

General treatment approach
1. Establish therapeutic relationship
2. Education and reassurance
3. Dietary and lifestyle modifications
Physician-Patient Relationship

- Reassure the patient that they are not unusual
- Identify why the patient is currently presenting
- Obtain a history of referral experiences
- Examine patient fears or agendas
- Ascertain patient expectations of physician
- Determine patient willingness to aid in treatment
- Uncover the symptom most impacting quality of life and the specific treatment designed to improve management of that symptom
Pharmacological therapies

Dietary and drug therapy for IBS can be considered in two categories:

1. End organ treatment aimed at relieving abdominal pain (antispasmodic drugs) or disturbed bowel habit (antidiarrhoeal and bulking agents).

2. Central treatment (antidepressants) targeted at patients with associated affective disorder.
Figure 11. Treatment of the main IBS symptom subgroups.

- Predominant symptom: Abdominal pain/distension (Post-prandial/chronic) → Diarrhea
- Predominant symptom: Altered bowel function → Constipation

Treatment:
- Antispasmodic
- Loperamide
- Increased fiber
  - Osmotic laxative

Click to enlarge
Psychological therapies

Cognitive-behavioral treatment
Hypnosis
Summary of the Management of Irritable Bowel Syndrome

Positive Diagnosis of IBS

Lifestyle Modifications
Fiber Supplementation, Dietary Modifications, Psychological Evaluation

Symptom Directed Therapy
- Antidiarrheals
- Laxatives
- Antispasmodics
- Anxiolytics
- Antidepressants

Serotonergic Drug Therapy
- Alosetron (Lotronex)
- Tegaserod (Zelnorm)

Alternative Therapy
- Hypnotherapy
- Holistic therapy
Functional dyspepsia

- **Definition:** pain or discomfort without the evidence of organic disease

- **Pathophysiological mechanisms**
  - Alterations in Motility and visceral sensation;
  - Psychosocial factors; Hp infection?

- **Clinical Features**
  - Ulcer-like dyspepsia;
  - Dysmotility-like dyspepsia;
  - Non-specific dyspepsia.

- **Diagnosis** (a diagnosis of exclusion): Rome II Criteria:

- **Treatment:** Goal;
  - Pharmacological therapies;
  - Psychological therapies
**Irritable bowel syndrome**

- **Definition:** Abdominal pain or discomfort and altered bowel habits without demonstrable organic disease.
- **Pathophysiological mechanisms**
- **Clinical Features:**
  1. Diarrhea-predominant;
  2. Constipation-predominant;
  3. Mixed
- **Diagnosis:** Rome II Criteria
- **Treatment:**
  1. General treatment approach;
  2. Pharmacological therapies
  3. Psychological therapies