Functional Gastrointestinal Disorders (FGIDs)

Eyad Swaity, MD
American Board, MRCP GI
Consultant Gastroenterology & Hepatology
Division of Gastroenterology - Jordan University Hospital

General Definition

A **functional disorder** is:

A medical condition that impairs the normal **function** of a bodily process, but where every part of the body looks completely normal under examination, dissection or even under a microscope.

Definition of FGIDs

The term "functional" is generally applied to disorders where the body's normal activities are impaired in terms of the:

- Movement of intestine
- Sensitivity of nerves of the intestine
- The way in which the brain controls some of these functions.

While,

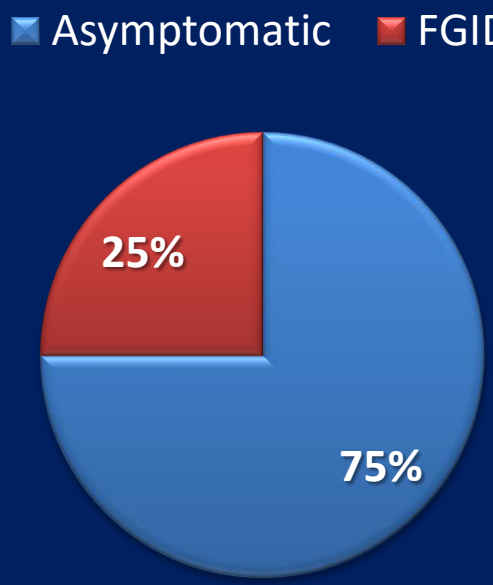
there are no structural abnormalities that can be seen by endoscopy, x-ray, or blood tests.

Prevalence

- Functional GI & motility disorders,

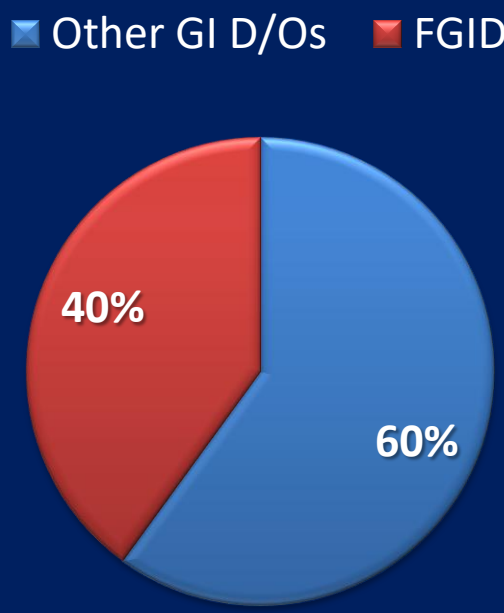
  Are the **MOST COMMON GI DISORDERS** in the general population.

Prevalence



About 1 in 4 people in the U.S. have one of these disorders.

In relation to other GI disorders



Account for about 40% of GI problems seen by doctors.

Criteria

The **Rome** diagnostic criteria categorize the functional gastrointestinal disorders and define symptom based diagnostic criteria for each category.

Esophageal disorders

Globus

Esophageal disorders

Globus:

A sensation of a lump, something stuck, or a tightness in the throat.

Esophageal disorders

Functional chest pain

Esophageal disorders

Functional chest pain:

The feeling of chest pain, presumably of esophageal origin.

✳(Can be confused w/cardiac chest pain which must be R/Oed 1st)

Esophageal disorders

Functional heartburn

Esophageal disorders

Functional heartburn:

Persistent burning sensation in the absence of gastroesophageal reflux disease (GERD), a motility disorder, or a structural explanation.

Esophageal disorders

Functional dysphagia

Esophageal disorders

Functional dysphagia:

The sensation of difficulty swallowing.

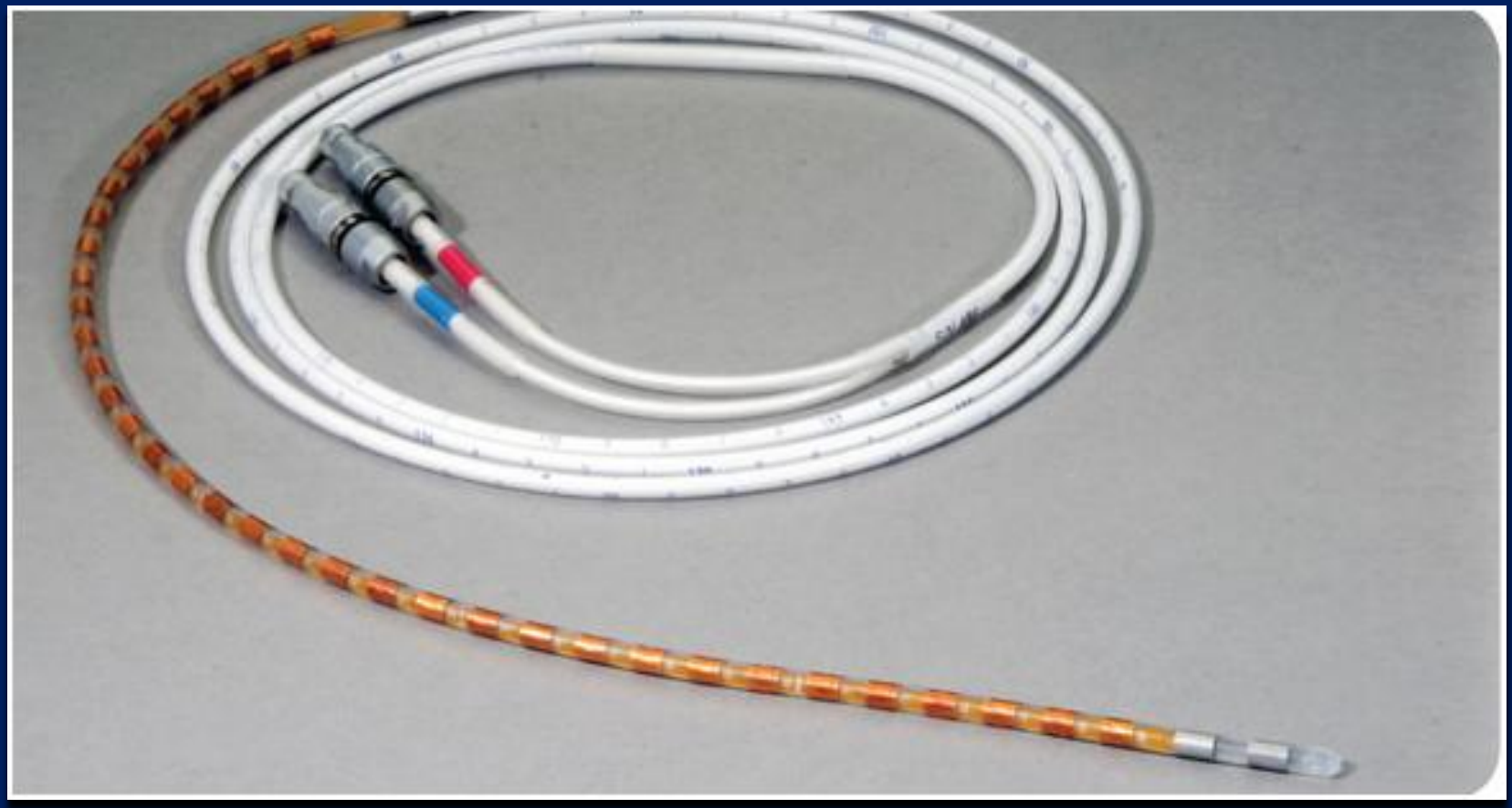
Esophageal disorders

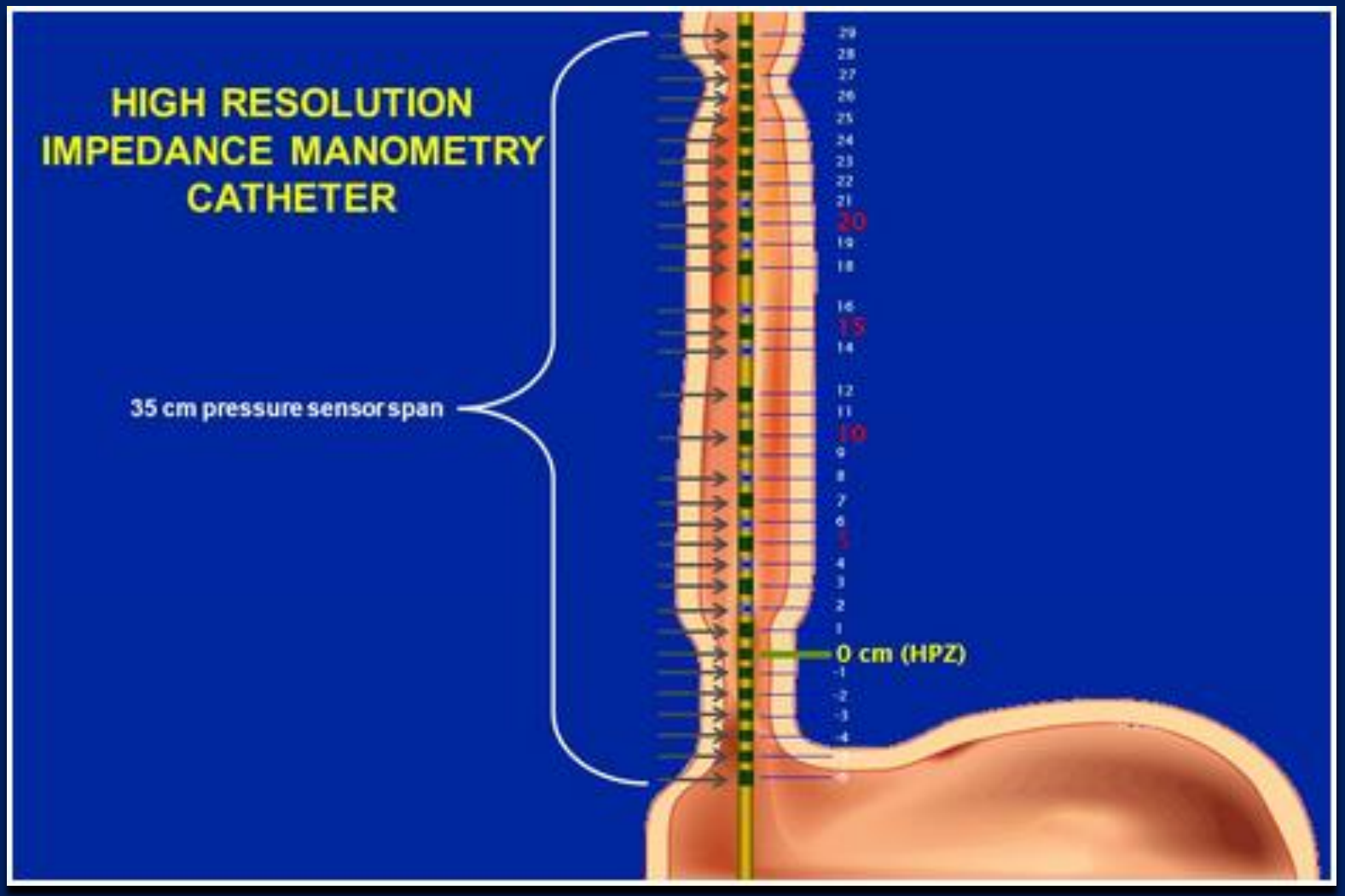
Reflux hypersensitivity

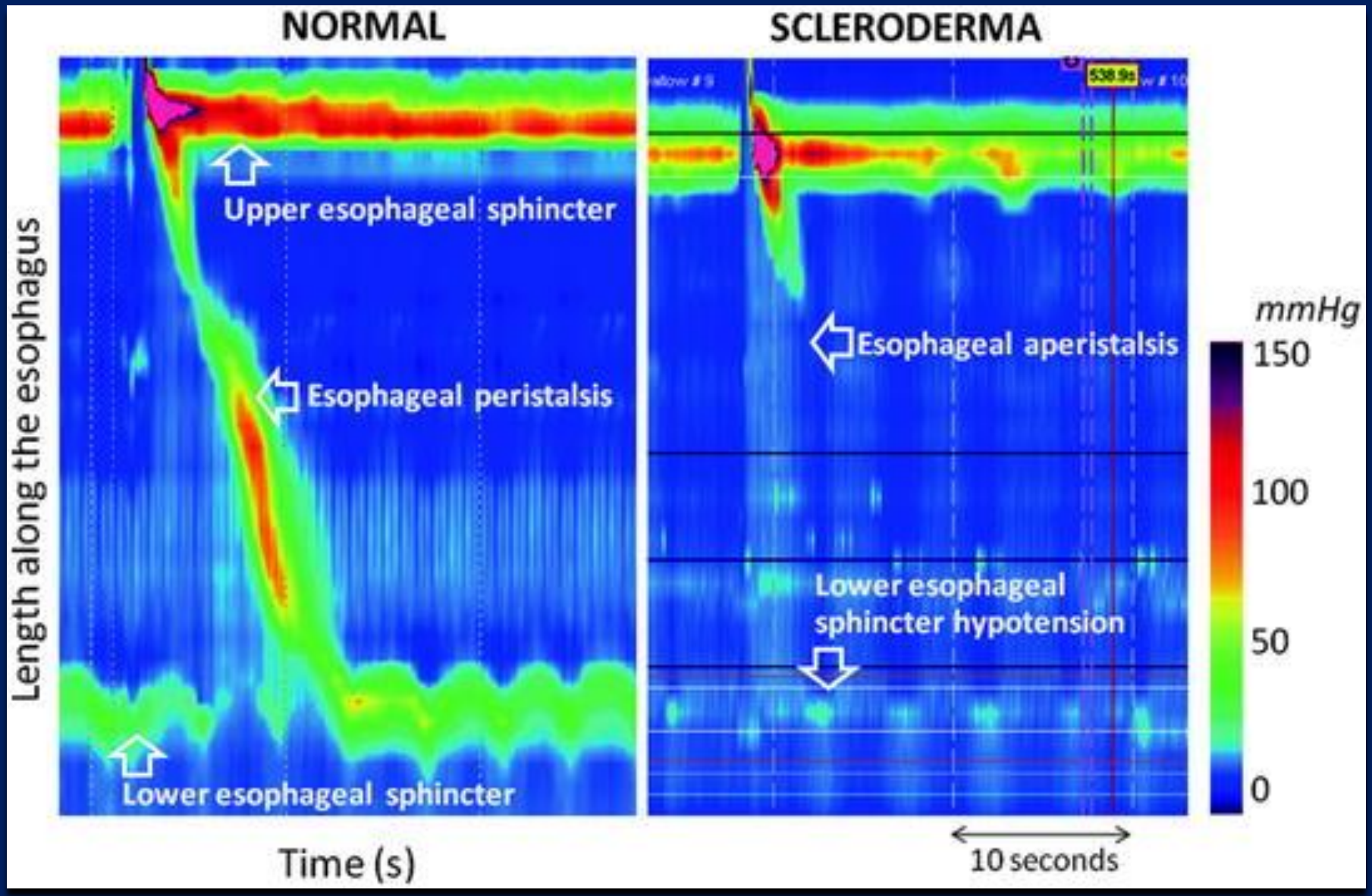
Workup

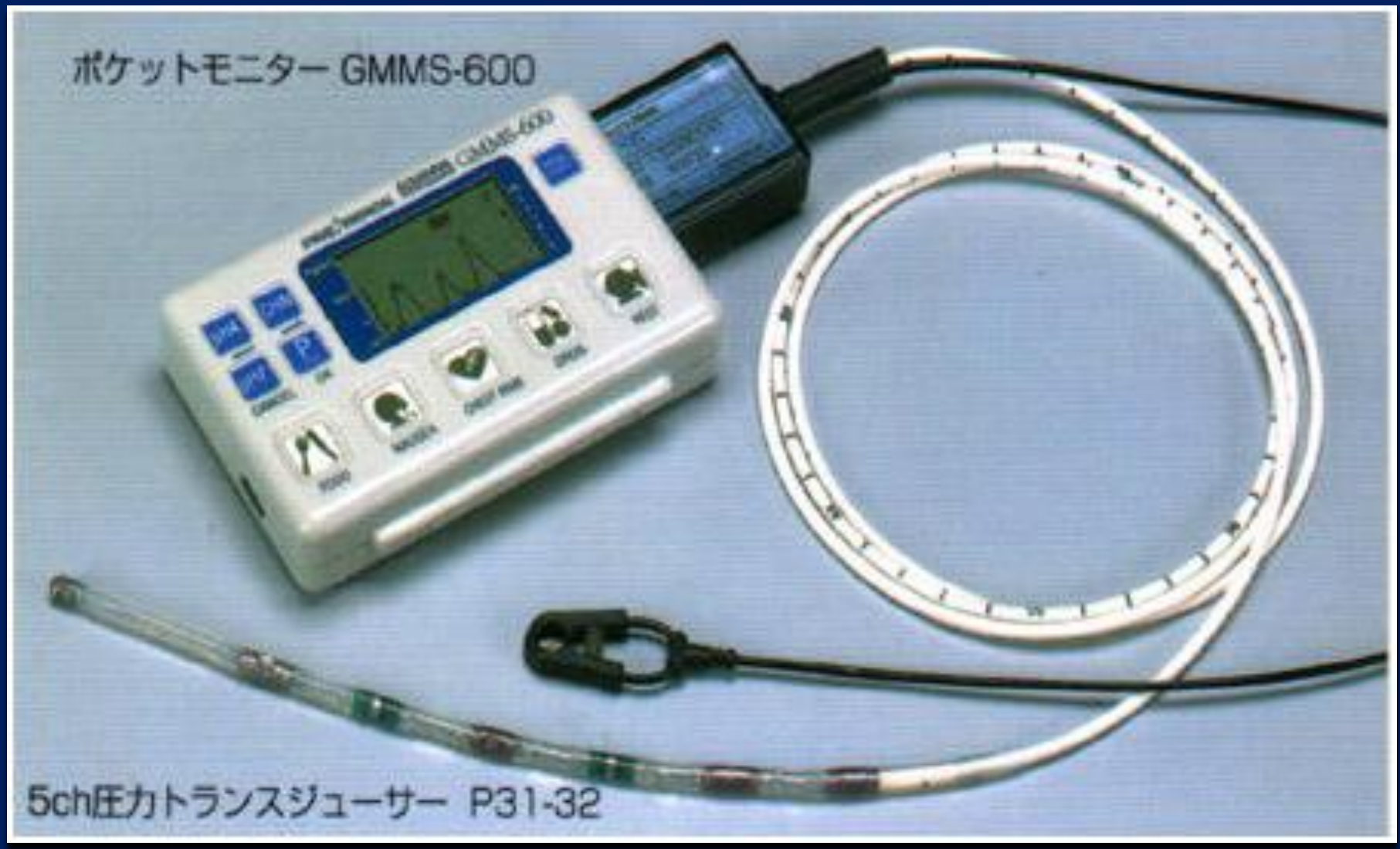
Alarm Symptoms

1. Age ≥ 50
2. Typical Symps ≥ 5yr
3. Dysphagia
4. Odynophagia
5. Persistent Vomiting
6. GI Bleed / ⊕FOB
7. Fe Def Anemia
8. Unexplained ↓Wt
9. Palpable LNs or Mass,
10. FHx of UGI Ca
11. Poor Response to medical ttt
12. Chest Pain



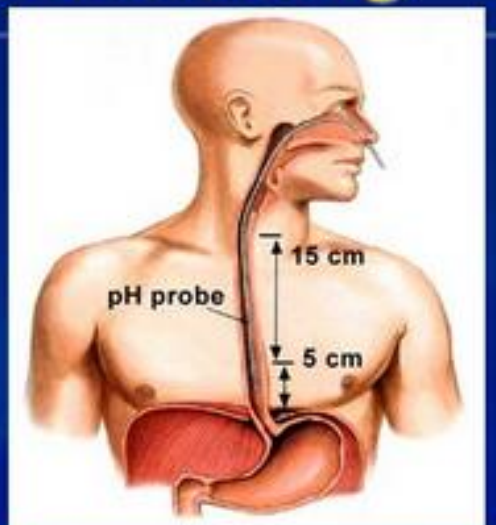

HIGH RESOLUTION
IMPEDANCE MANOMETRY
CATHETER
35 cm pressure sensor span
0 cm (HPZ)


NORMAL
SCLERODERMA
Length along the esophagus
Upper esophageal sphincter
Esophageal peristalsis
Lower esophageal sphincter
Esophageal aperistalsis
Lower esophageal sphincter hypotension
mmHg
150
100
50
0
Time (s)
10 seconds


ポケットモニター GMMS-600
5ch圧力トランスジューサー P31-32

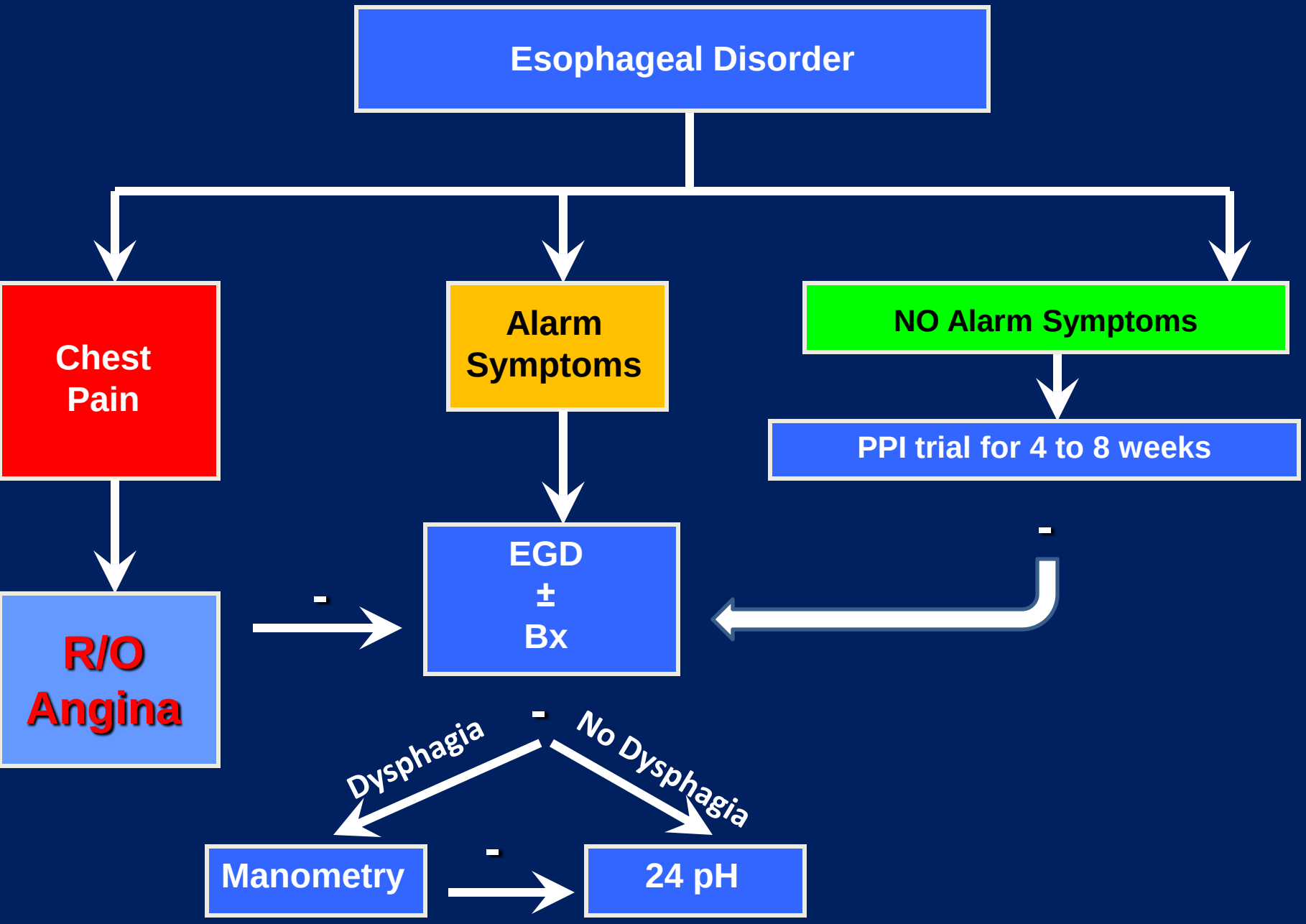
24-Hour Esophageal pH Monitoring

- Most accurate test for measuring pattern, frequency, and duration of reflux episodes
- Documents correlation between reflux episodes and symptoms
- Sensitivity (77-100%)
  - *Normal in 25% of esophagitis!*
- Specificity 85-100%
- Most useful when diagnosis still unclear



Dent et al. *Gut.* 1999;44(suppl 2):S1-S

Summary


Esophageal Disorder
Chest Pain
Alarm Symptoms
NO Alarm Symptoms
PPI trial for 4 to 8 weeks
-
EGD ± Bx
-
R/O Angina
-
Dysphagia
No Dysphagia
Manometry
-
24 pH

Gastro-Duodenal disorders

Functional Dyspepsia

Functional Dyspepsia

AKA: Non Ulcer Dyspepsia (NUD)

Dyspepsia in General population (15% (Up to 25%))

Commonest Æ of Dyspepsia (60%)

Occurrence w/IBS (30%)

Alarm Symptoms

1. (+NSAIDS use in UK)
2. Dyspepsia w/Age (>55)
3. Dysphagia / Odynophagia
4. Persistent vomiting
5. Anorexia / unexplained ↓Wt
6. Hematemesis / Melena
7. Unexplained anemia or Iron def
8. Palpable Epigastric Mass/LN
9. Jaundice
10. Hx of Gastric Sx / PUD
11. FHx of UGI Ca

Functional Dyspepsia

Definition: (Rome III)

(Onset: ≥ 6Ms + Duration: ≥ 3Ms): **≥ 1** of:

- **Postprandial fullness**
- **Early satiety**
- **Epigastric pain**
- **Epigastric burning**

+

No evidence of structural D/O **(N. EGD)**

± Gastric Scintigraphy

+

No evidence that dyspepsia exclusively relieved by defecation or is assoc w/the onset of change in stool frequency or form

Functional Dyspepsia

Pathophysiology

Dysmotility	Visceral sensitivity	Duodenum	Infection	Psychological factors
• Delayed gastric emptying • ↓gastric compliance • Accelerated gastric emptying	• N. gastric compliance, gastric distension → pain 2ry to ↓N. threshold for pain	• duodenal hypersensitivity to lipids or acid	• H. Pylori • Gastroenteritis	• (if w/up ⊖): Pts w/Psych D/Os more prone to suffer from functional dyspepsia

Sub-Types

>87%

Postprandial Distress Syndrome (PDS)

Meal related symp:
Fullness & **Early satiety**

± response to
Prokinetics

<10%

Epigastric Pain Syndrome (EPS)

~~Meal~~ unrelated symp:
Epigastric Pain & Burning

± response to
PPI

Management

Rome III sub-types	
Postprandial Distress Synd (PDS)	Epigastric Pain Synd (EPS)
Meal-related symp of post prandial **fullness** & **early satiety** → ± respond to **Prokinetics** (Domperidone)	~~Meal~~ unrelated symp of epigastric **Pain** & **Burning** → ± respond to **PPI**/H2RA
(1st) Reassurance (until now NO medication was ~~approved~~)	
(2nd) H Pylori Status	
⊕	⊖
AGA & ACG recommend: H. Pylori⊕ eradication in NUD	↓
↓No Response↓	

minority of Functional dyspepsia pts w/H.Pylori will benefit from eradication

- **Antidepressants**
- **PPI** (λ: 1 hr Only)
- **Prokinetics** (↑Gastric Emptying)
- ? **Sucralfate (Placebo effect)**
- **Sumatriptan** (**5-HT agonist**): Causes fundus relaxation & restore gastric accommodation

Other Gastro-Duodenal D/Os

- **Cyclic Vomiting Synd (CVS):**

  Rome III Criteria: •Stereotypical (Onset/Duration) episodes of N&V last <1wk + ≥ 3 episodes/yr + •completely asymptomatic between episodes.
  ≈no other Dx ± Hx/FHx of migraine.
  ttt: Tri-Cyclic Antidepressants.

- **Rumination Synd:**

  Effortless controlled Vomiting, (w/o ~~Nausea~~), non-Acidic, reswallowing/spitting.
  ttt: Behavioral: diaphragmatic breathing.

Bowel disorders

Irritable Bowel Syndrome (IBS)

Alarm Symptoms

1. Age>50
2. Unexplained ↓Wt
3. Rectal Bleeding
4. Recent Change In Bowel Habits X ≥6 Wks
   (Change In Stool Caliber / Frequency / Consistency)
5. Nocturnal Symptoms
6. FHx Of GI Ca
7. FHx Of IBD
8. Significant Unexplained Hematological (Anemia) / Biochemical Abnormalities
9. P/E Findings (Abd Mass / Rectal Mass)

Irritable Bowel Syndrome (IBS)

Rome III Criteria:

Recurrent abd **pain**/**discomfort** for

≥3 ds/M x **≥3 Ms since 6Ms**, associated w/: ≥**2** of:

- **Improvement with defecation**
- Onset associated with a change in **stool frequency**
- Onset associated with a change in **stool form** or appearance

★ Rome II Criteria: + Mucus per rectum

✱ Criteria must have been fulfilled for the **past 3 Ms**, with symptom **onset ≥ 6 Ms** before diagnosis

Irritable Bowel Syndrome (IBS)

Etiology: (?)

★**Food Intolerance**:

↑↑Mast Cells + Food Ag → Food intolerance → IBS

★**Post infectious GE IBS**:

- (P-P): post-infection ↑Permeability & persistent inflammation
- Risk factors for Post infectious GE IBS (10%):
  - ↑Duration of infection (the strongest factor)
  - ↑w/↑severity of infection
  - Cramping w/initial infection
  - F
  - Psych D/Os
  - ↓ Age (IBS↓ w/↑Age)

Irritable Bowel Syndrome (IBS)

Constipation-predominant IBS (C-IBS)	Diarrhea-predominant IBS (D-IBS)
Slow colonic transit (only 25%). Majority w/N. colonic transit	•**Rapid colonic transit** (45%) •↓TI production of Fibroblast Growth Factor 19 (FGF-19) which ⊖ Bile Acid reuptake→ ↑Bile Acid reaching colon → **Cholerheic diarrhea** (25%) •Possible association w/**SIBO** (10% imp w/**Rifaximin** (Yet, Rifaximin use should be limited to pts w/confirmed SIBO)). •↑Fat in diet •↑FODMAPs in diet •↑Mucosal permeability & ↑number of enteroendocrine cells containing serotonin

Irritable Bowel Syndrome (IBS)

A Diagnosis of exclusion:

- CBC N.
- CRP N. (<10)
- ESR N. (M<20/F<30)
- Anti-tTG IgA & Anti-tTG IgG: ⊖
- ±: TSH, Stool Routine

Irritable Bowel Syndrome (IBS)

FODMAPs

Fermentable

Oligo-
Di-
Mono-
} Saccharides

And

Polyols (Sugar-Free sweetners)

Irritable Bowel Syndrome (IBS)

Management:

1st step

- (1)(Defining & eliminating food-related stimuli):
  - **Restriction of** osmotic, rapidly fermentable, poorly absorbed carbs: **FODMAPs** → significantly ↓symptoms in IBS
  - Gluten causes GI symptoms in IBS

  (even w/out celiac disease)
- (2) **Behavioral ttt**:

  Deal w/specific patient concerns or fears regarding their symptoms → **improve pt sense of global well being**
- (3) Deal w/psychosocial stressors

Irritable Bowel Syndrome (IBS)

Management:

2nd step (Symptoms directed)

1. **Abdominal pain:**
   - Spasmolytics: Anticholinergics/**Peppermint Oil→**
   - **low-dose Tri-cyclic antidepressants**
   - SSRIs (Sertalin may cause diarrhea)

Irritable Bowel Syndrome (IBS)

Management:

2nd step (Symptoms directed)

2. **Bloating:**

   Pro-Biotics (Bifidobacteria) ± Simethicon/Dimethicon

Irritable Bowel Syndrome (IBS)

Management:

2nd step (Symptoms directed)

3. Constipation :

1) ↑Fibers

⬇

2) Osmotic Laxatives

±

3) Stimulant Laxative

Irritable Bowel Syndrome (IBS)

Management:

2nd step (Symptoms directed)

4. Diarrhea:

1) Bulk forming Agents (Psyllium)/Rice (low FODMAP)
   (Avoid ↑FODMAP: Beans, Apple, Cabbage, wheat)
2) Opioids: ♦Loperamide ♦Diphenoxylate