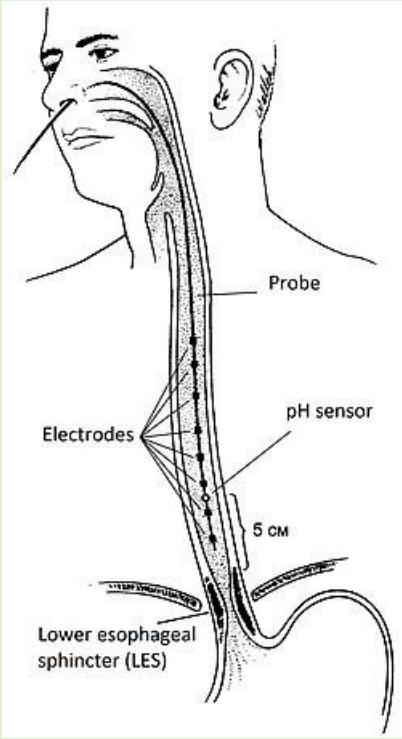
Diagnosis of refractory reflux

Dr Ganji

Emam Reza Hospital

MUMS



- **Unproven GERD**, testing off antisecretory therapy to identify evidence of reflux (criteria of Lyon consensus)

- **Proven GERD**, Abnormal pH impedance monitoring and/or persistent erosive esophagitis on endoscopy while on optimized PPI therapy
- DD of refractory symptoms and refractory GERD

updated Lyon Consensus 2.0

- **LA grades B, C and D**
- **Biopsy proven Barrett’s**
- **Peptic stricture**

are conclusive for a diagnosis of GERD

updated Lyon Consensus 2.0

AET >6% off PPI therapy on pH-impedance monitoring, is conclusive for GERD.

- AET from 4% to 6%
- Reflux episodes between 40 and 80 per day,
- LA grade A,

Required additional evidence derived from manometry.

Includes reduced EGJ pressure , presence of HH or IEM/absent contractility.

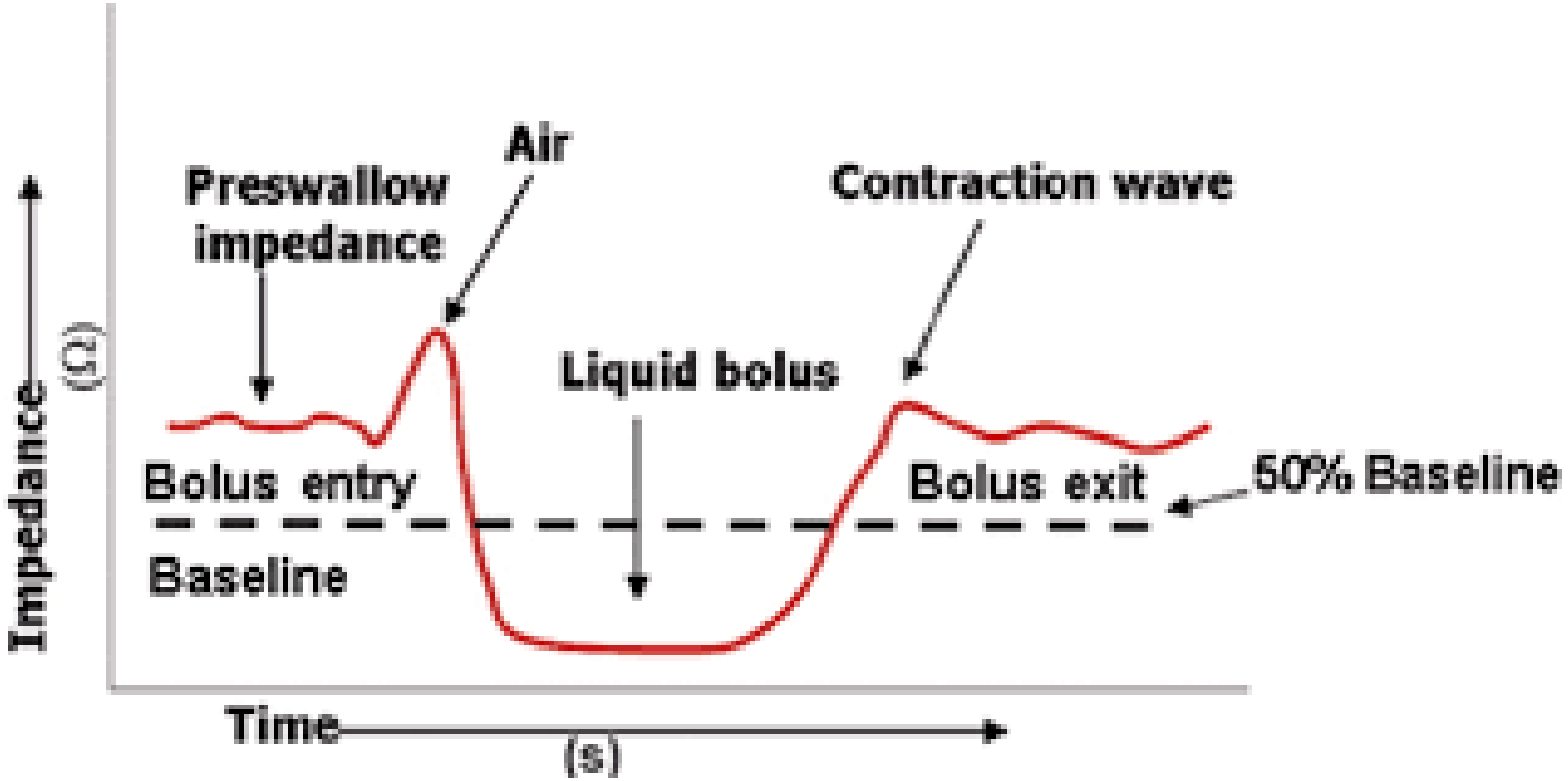
Refractory GERD or refractory symptoms

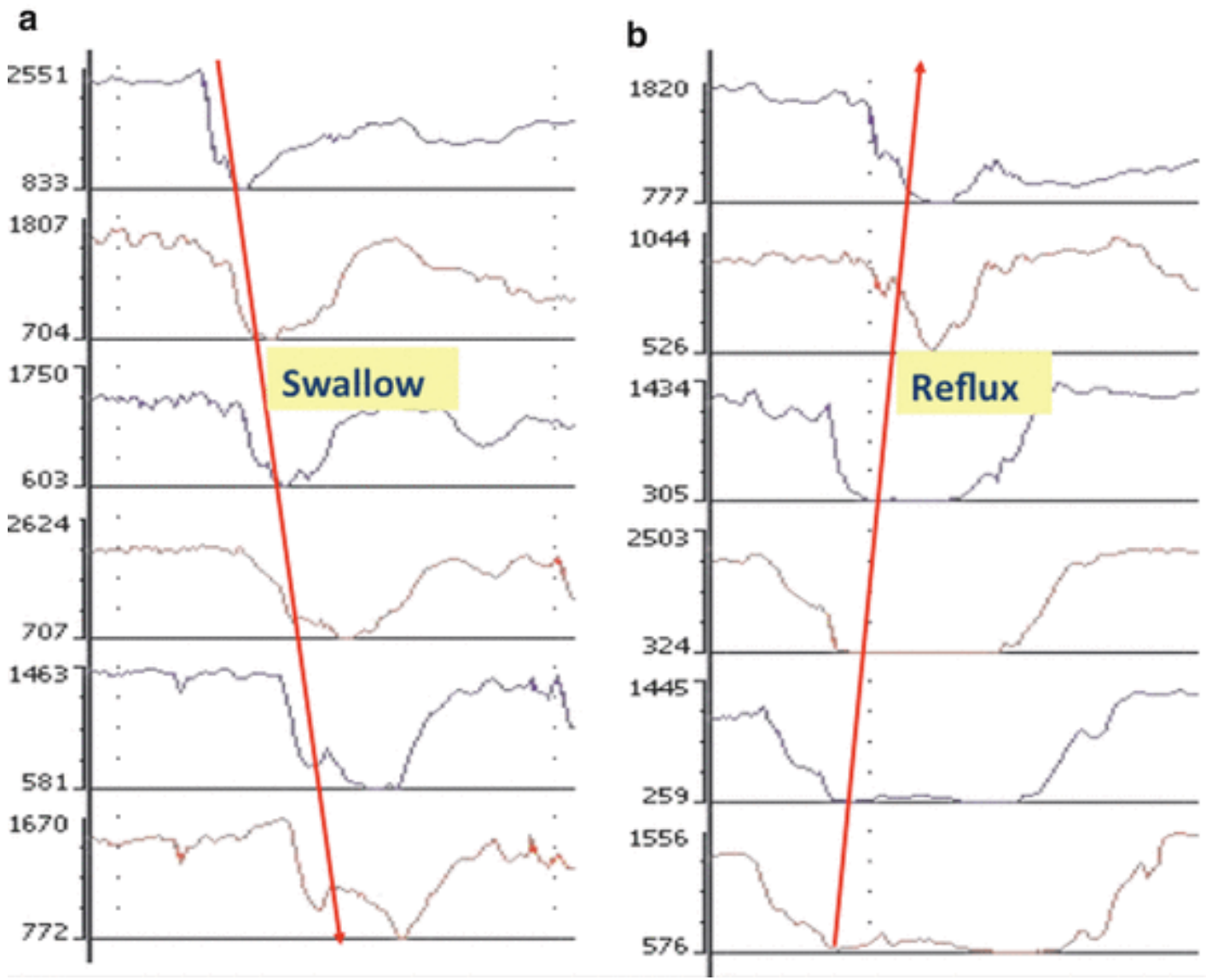
Advanced technology is key diagnosis

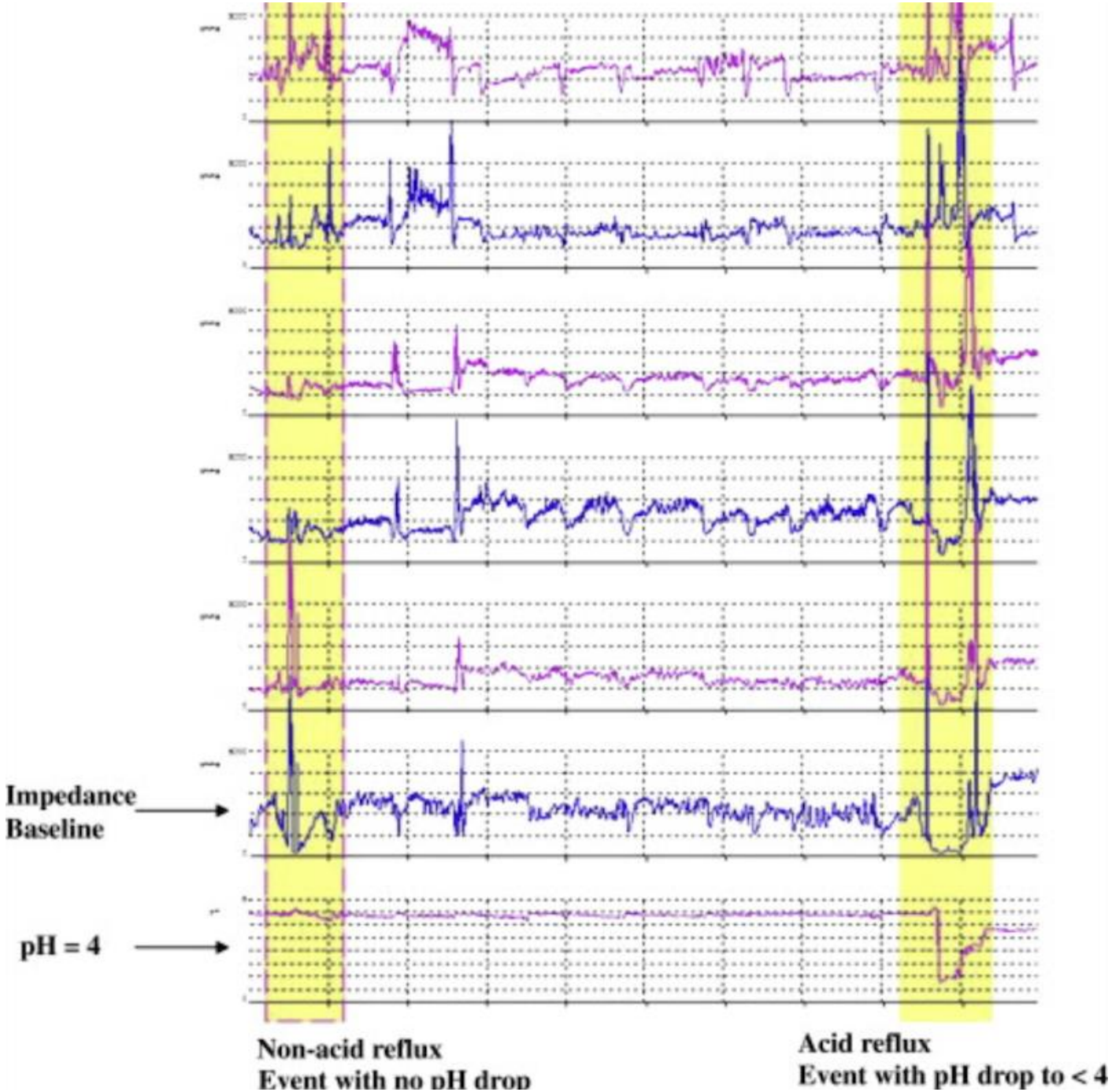
when endoscopy is normal

PH-impedance monitoring, is crucial

For assessment of degree, and type (acidic or weakly acidic) of GERD and the correlation between symptoms and reflux .


Air
Preswallow impedance
Contraction wave
Liquid bolus
Impedance (Ω)
Bolus entry
Bolus exit
50% Baseline
Baseline
Time (s)


a
2551
833
1807
704
1750
603
2624
707
1463
581
1670
772
Swallow
b
1820
777
1044
526
1434
305
2503
324
1445
259
1556
576
Reflux


Impedance Baseline
pH = 4
Non-acid reflux
Event with no pH drop
Acid reflux
Event with pH drop to < 4

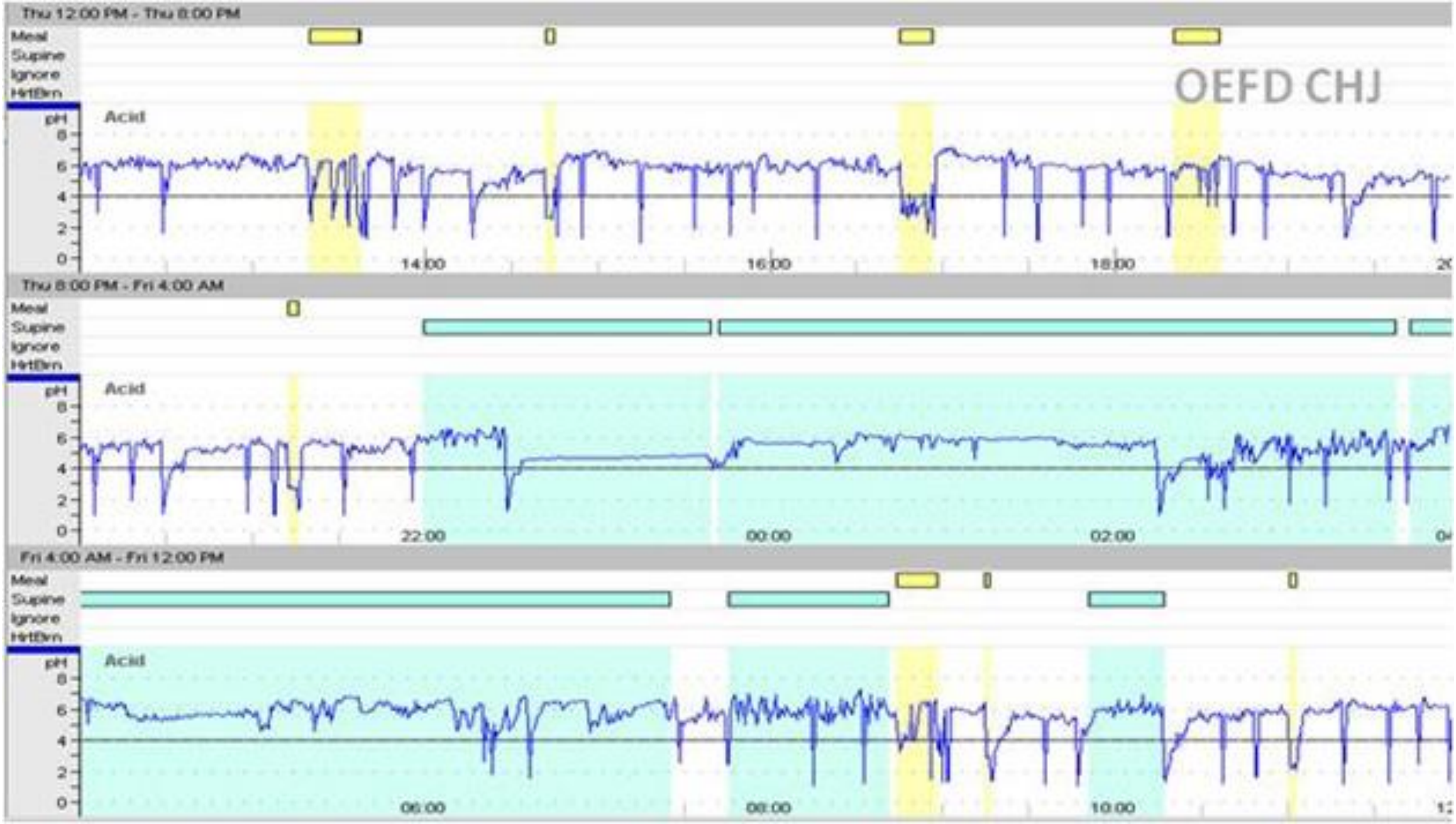
- MII- pH monitoring assesses the chemical composition of reflux (acidic, weakly acidic, or non-acidic)

- its physical composition (liquid, gaseous, or mixed)

MII-pH monitoring diagnosed not only **acid reflux**

- **Non-acid reflux** (when AET is normal but patient reports symptoms corresponding to non-acid or weakly acid reflux)

- **Non-reflux** (when AET is normal and reported symptoms are independent of reflux events)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Meal
Supine
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02:00
Fri 4:00 AM - Fri 12:00 PM
Meal
Supine
Ignore
HrtBrn
pH
Acid
8
6
4
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0
06:00
08:00
10:00

- pH-24h may predict the most severe forms of esophagitis, as evidenced by the higher frequency of reflux episodes >5 min, higher AET, and higher DeMeester score

24 hour pH monitoring components	Normal value
Supine period	< 1.2 % (0.286 ± 0.467)
Total period	< 4.2 % (1.47 ± 1.38)
Episodes > 5 min	3 or less (0.64 ± 1.28)
Longest episode	< 9.2 min (3.83 ± 2.78)
Upright period	< 6.3 % (2.33 ± 1.97)
Total episodes	< 50 (18.93 ± 13.78)

Patients with supine-type reflux needs PPI doses divided into two daily doses to improve control of nighttime reflux and effectively reduce AET.

Insert Page...

diagnostics

MDPI

Review

Utilizing Esophageal Motility Tests in Diagnosing and Evaluating Gastroesophageal Reflux Disease

Wangliu Yang [1,†], Yurong Huang [1,†], Lei He [1], Dongmei Chen [2], Sheng Wu [2], Yan Tian [2], Juan Zheng [1], Jie Yang [1,*] and Gengqing Song [3,*]

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Review

Refractory Gastroesophageal Reflux Disease: Diagnosis and Management

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[1]Division of Pediatric Gastroenterology, Washington University School of Medicine, Saint Louis Children's Hospital, St. Louis, MO, USA; and [2]Division of Gastroenterology, Washington University School of Medicine, St. Louis, MO, USA

- HREM important in understanding GERD’s pathophysiology.

- HREM is particularly valuable for assessing esophageal function and management of refractory GERD

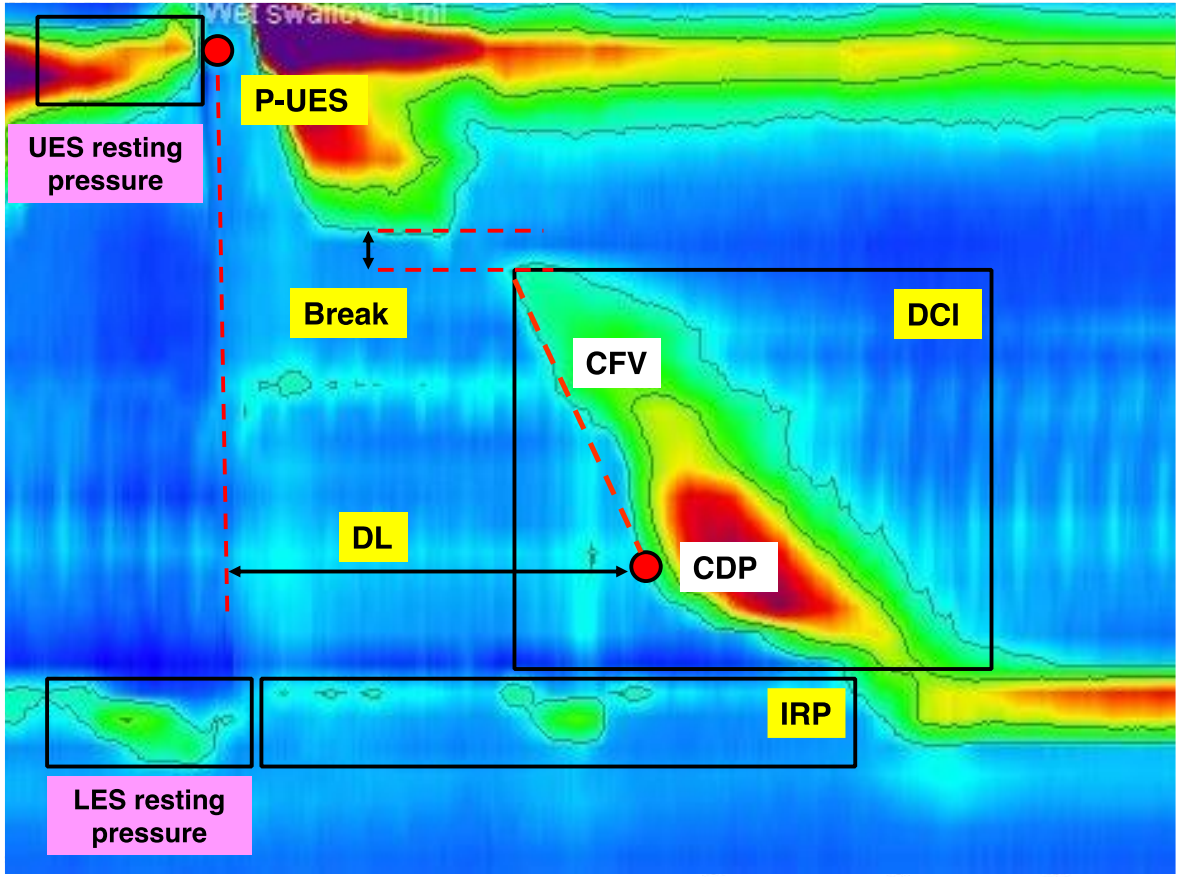
HRM parameters

EGJ junction

- LES morphology (hiatus hernia)
- IRP: Integrative Relaxation Pressure
- IBP: Intra Bolus Pressure

Contraction wave

- DCI: Distal Contraction Integral
- Transition zone length
- Contraction Front Velocity
- Distal Latency



Contraction Vigor (DCI at 20 mmHg)	
Criteria (mmHg·s·cm)	Scoring
DCI < 100	Failed peristalsis
DCI 100 – 450	Weak peristalsis
DCI 450 – 8000	Normal peristalsis
DCI ≥ 8000	Hypercontractile
Failed OR Weak	Ineffective

Contraction Pattern (not scored for DCI < 450)	
Criteria	Scoring
DL < 4.5 s	Premature contraction
Large break	Fragmented contraction
None of the above	Intact

Impairment of the Anti-Reflux Barrier (EGJ)

The anti-reflux barrier is a high-pressure zone between the stomach and the esophagus (LES and CD= EGJ).

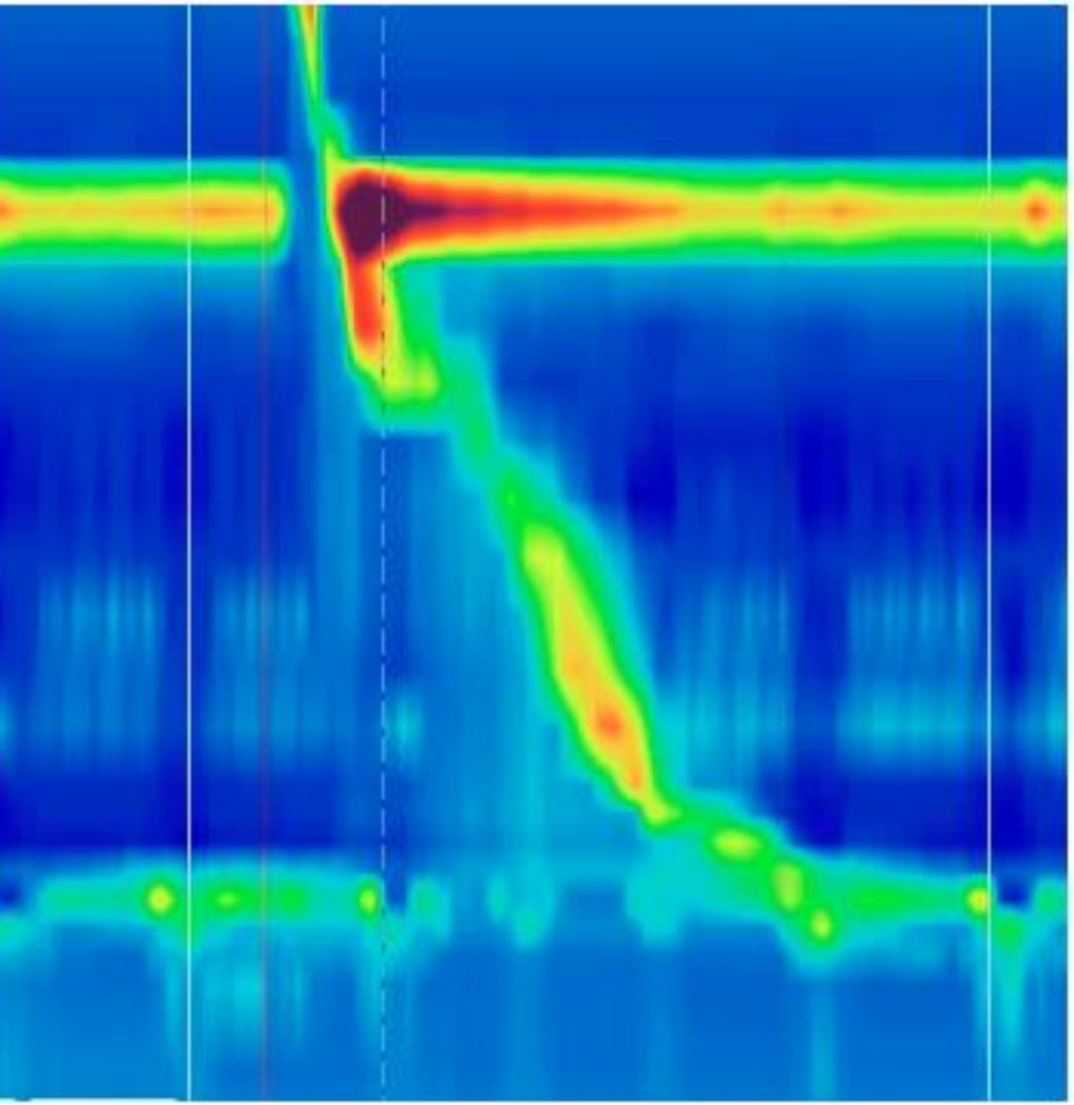
- Esophagogastric junction contractile integral (EGJ-CI) and the LES-CD separation use to evaluate anti-reflux barrier at EGJ

- EGJ-CI is mean basal and end-expiratory LES pressures.

- Assessing the anatomical structure of EGJ and contractile function.

Abnormal Morphology of the EGJ

- HREM , shows separation of LES-CD.
- Chicago Classification v4.0 categorizes the morphology of the EGJ into three subtypes based on the LES and CD



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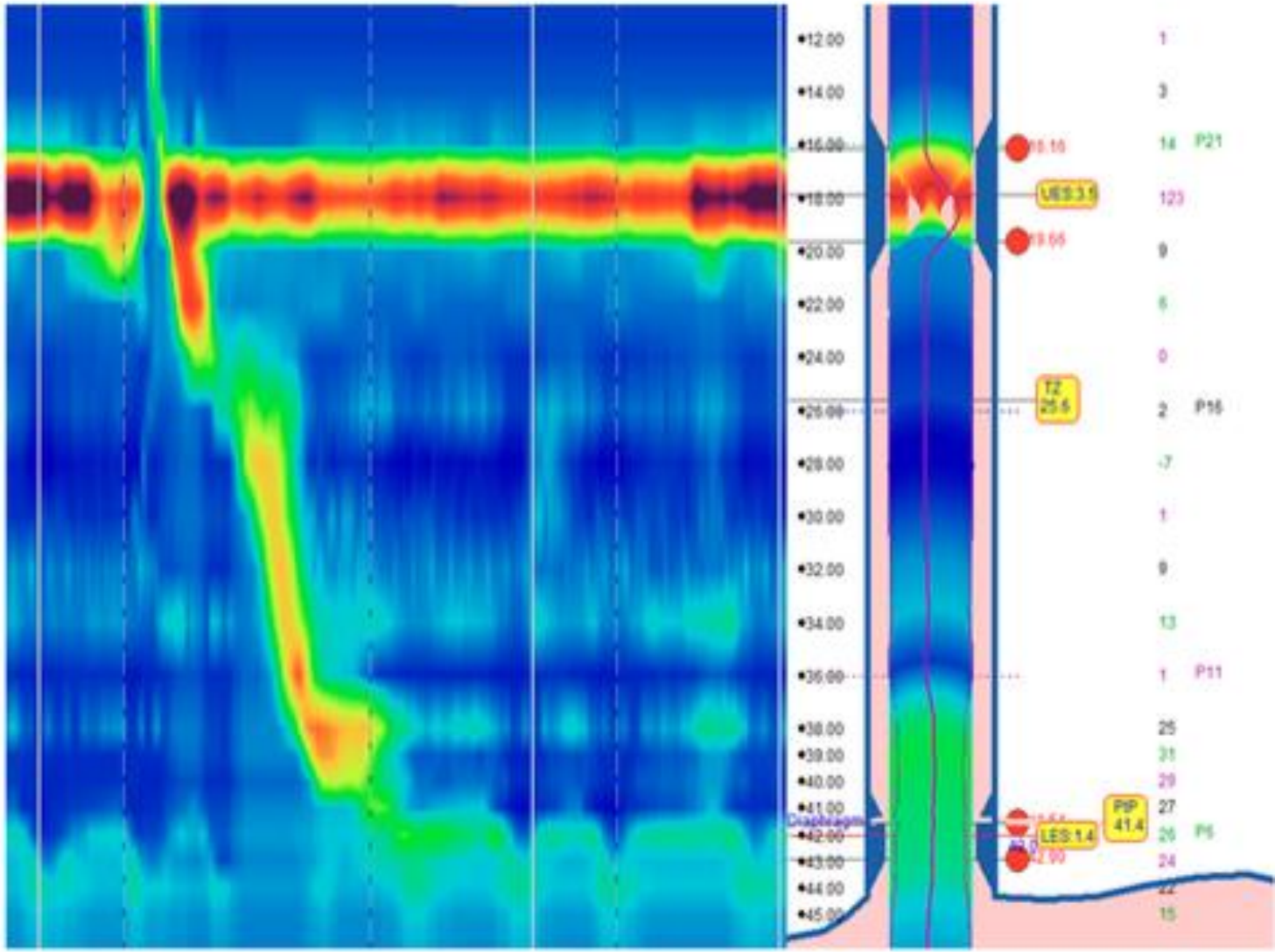
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UES 3.5
TZ
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PIP
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LES 1.4
1
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14
P21
123
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6
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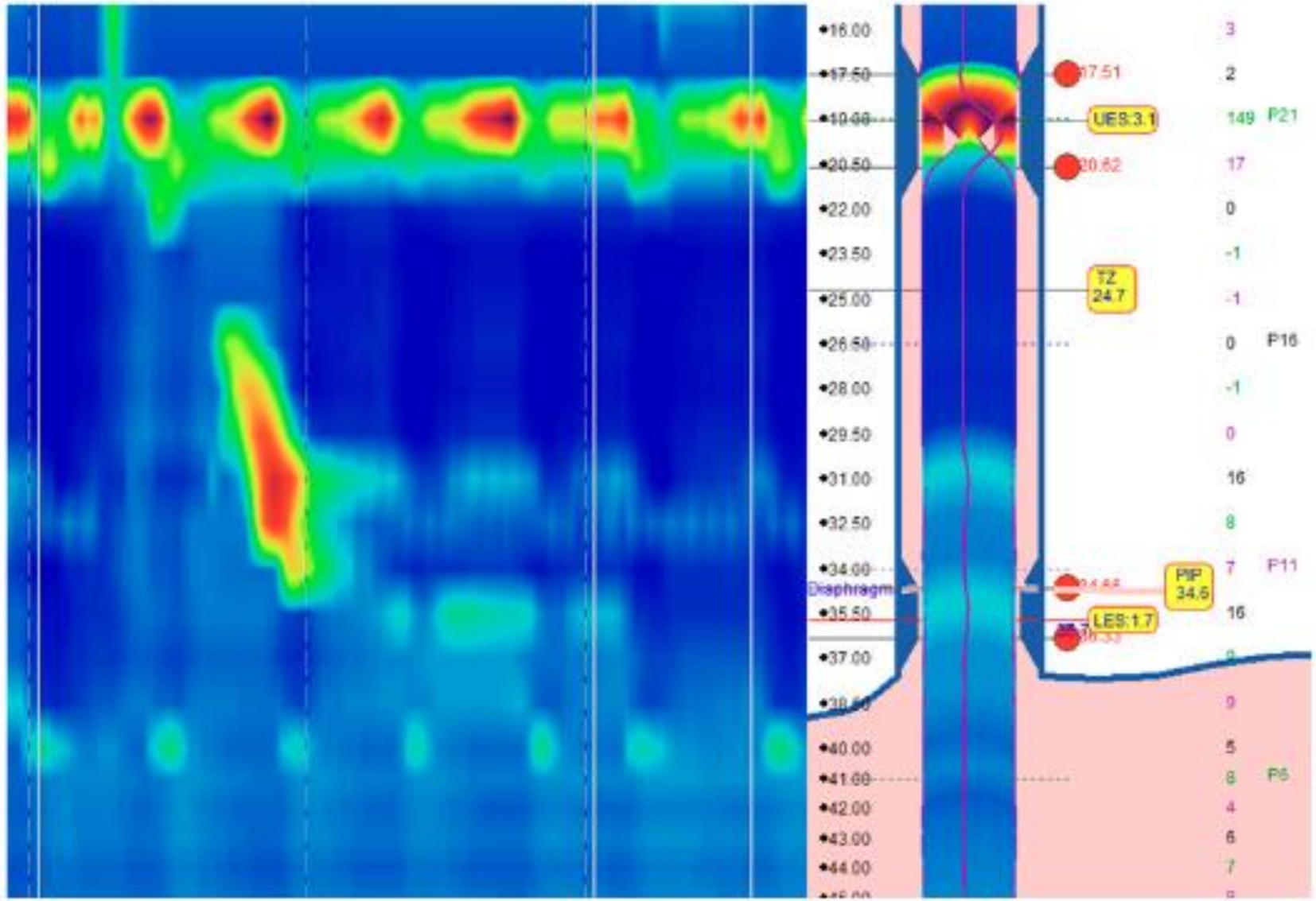
(b)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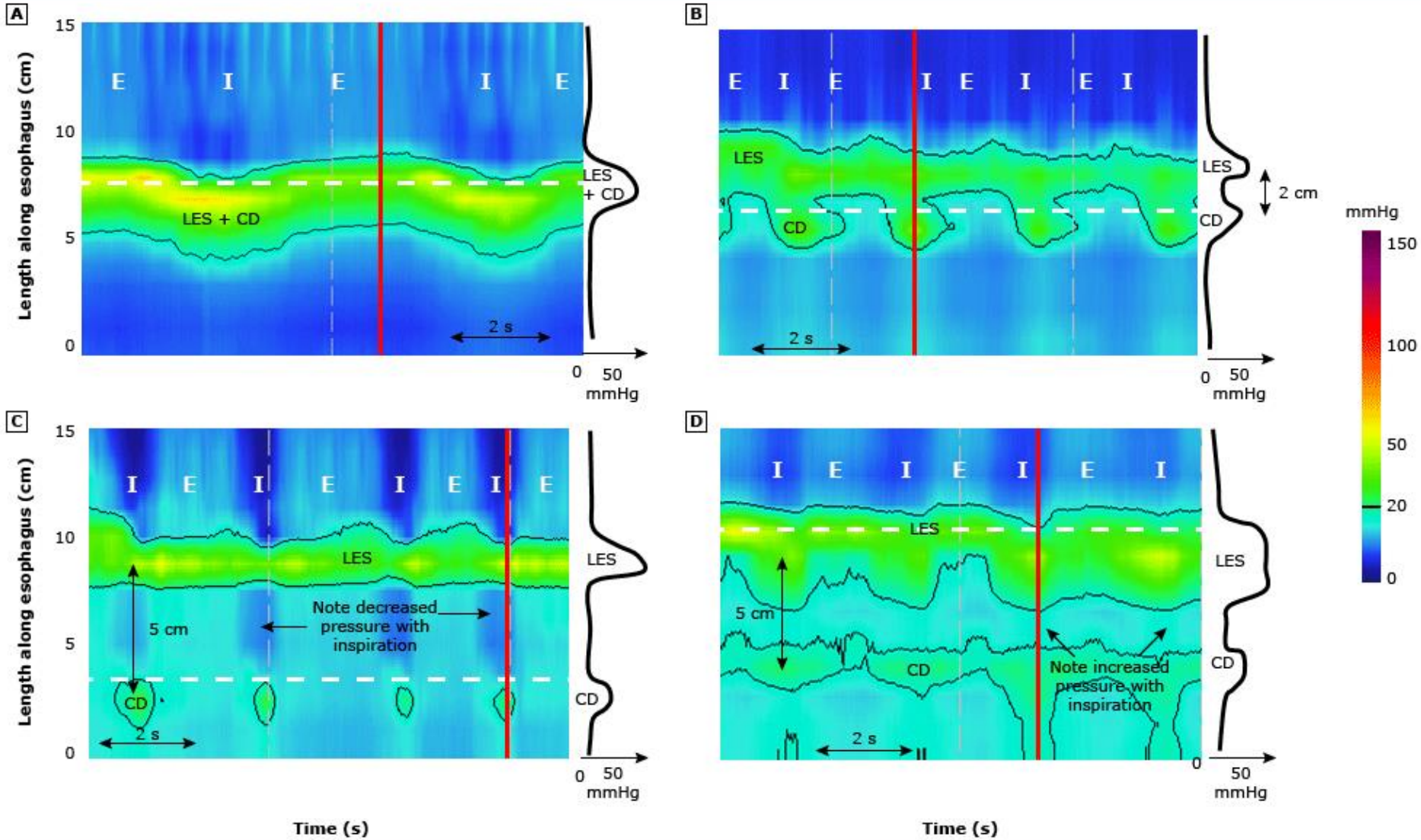
Diaphragm
35.50
37.00
40.00
41.00
42.00
43.00
44.00
17.51
UES:3.1
20.62
TZ
24.7
PIP
34.6
LES:1.7
3
2
149
P21
17
0
-1
-1
0
P16
-1
0
16
8
7
P11
16
9
5
8
P6
4
6
7

(c)

Subtypes of esophagogastric junction pressure morphology on esophageal pressure topography



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Transient Lower Esophageal Sphincter Relaxation (TLESR)

- It is relaxation of the LES ,independently of swallowing.

- Persists for over 10 s, and frequently involves the suppression of CD activity
- Its physiological mechanism was based to develop pharmacological treatments like Baclofen.

Motor Disorders in the Esophageal Body

- Peristalsis are critical in esophageal clearance and exposure to gastric reflux.
- Ineffective esophageal motility (IEM) is characterized by over 70% of peristaltic contractions ineffective, or at least 50% failing, includes :

1)weak contraction (100 ≤ DCI < 450 mmHg·s·cm),

2)complete contraction failure (DCI < 100 mmHg·s·cm)

3)fragmented contractions

- Disorders that mimic GERD such as achalasia (AC), (EGJOO), esophageal hypermotility, and (DES) can diagnosed by HREM .

- Provocation tests in HREM, including the rapid drink challenge (RDC), solid test meal (STM), and multiple rapid swallows (MRS), enabling assessment

HREM is effective in explaining esophageal symptoms that are unresponsive to PPI therapy

Predicting PPI Efficacy in GERD Based on HREM

- Individuals who have intact EGJ and a good body contractility exhibit a lower degree of acid reflux ,probably not respond to PPI treatment
- persistent symptoms, implicating non-GERD mechanisms

endoscopy, pH-impedance or wireless pH monitoring, HRM

Drugs and reflux like symtoms

Statins (i.e., Simvastatin, Rosuvastatin)

Angiotensin converting enzyme-inhibitors (i.e., Ramipril)

Selective serotonin reuptake inhibitors (i.e., Fluoxetine)

Calcium channel blockers

Antiplatelets (i.e., Clopidogrel)

Antibiotics (i.e., Clindamycin or Doxycycline)

Ferrous sulfate

NSAIDs (i.e., Aspirin, Ibuprofen, Naproxen)

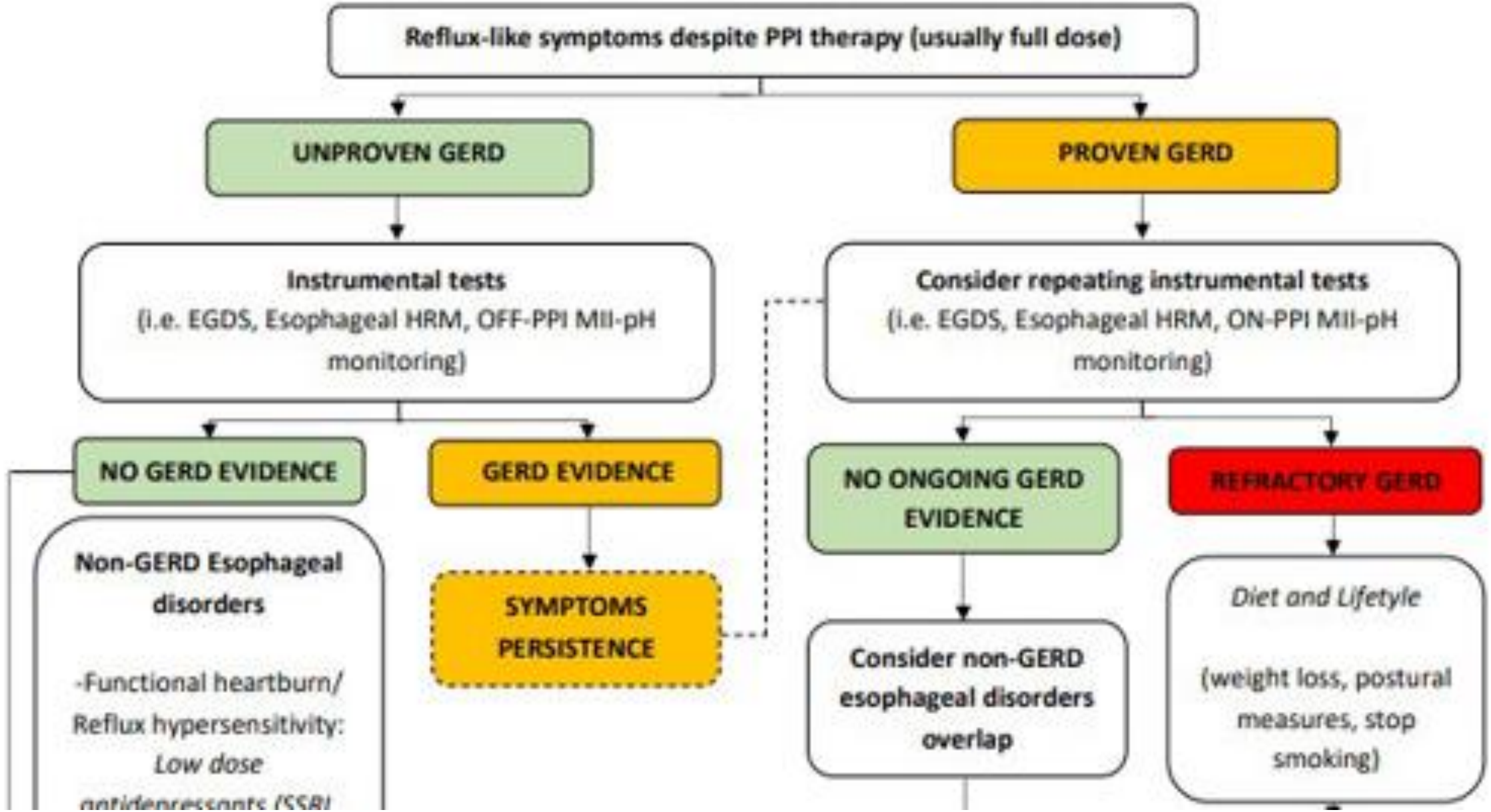
Theophylline

Nitrates

Phosphodiesterase 5 inhibitors (i.e., Sildenafil, Tadalafil)

POTENTIAL CAUSES OF rGERD

- **PPI Compliance**
- **PPI Metabolism**
- **Duodenogastroesophageal or Bile Reflux**
- **Delayed Gastric Emptying**
- **Esophageal Hypersensitivity**


Reflux-like symptoms despite PPI therapy (usually full dose)
UNPROVEN GERD
PROVEN GERD
Instrumental tests
(i.e. EGDS, Esophageal HRM, OFF-PPI MII-pH monitoring)
Consider repeating instrumental tests
(i.e. EGDS, Esophageal HRM, ON-PPI MII-pH monitoring)
NO GERD EVIDENCE
GERD EVIDENCE
NO ONGOING GERD EVIDENCE
REFRACTORY GERD
Non-GERD Esophageal disorders
-Functional heartburn/ Reflux hypersensitivity:
Low dose
SYMPTOMS PERSISTENCE
Consider non-GERD esophageal disorders overlap
Diet and Lifetyle
(weight loss, postural measures, stop smoking)

- 25 to 48% of rGERD’s have esophageal motility disorder.

- chronic cough, voice hoarseness, and dysphagia have been associated with esophageal motility disorders and abnormal exposure to acid.

Thanks For your Attention

