

Treatment Options for GERD



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Outline

- 1. Unmet needs of GERD
- 2. Case sharing
- 3. Treatment options for GERD
- 4. Efficacy and safety of Algitab

1. Unmet needs of GERD

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警察因嚴重胃食道逆流輕生？ 醫：可醫治



健康醫療網



撰文者 | 關嘉慶

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健康醫療網


(健康醫療網 / 記者關嘉慶報導)

任職桃園分局的員警許稚偉因胃食道逆流纏身，竟然因此病而厭世，先槍殺交往多年的女友蘇芮文之後，再自轟身亡；消息傳出後，令人不勝唏噓！大家都甚為感嘆，他為何會因胃食道逆流而輕生？

One in two patients had persistent GERD symptoms despite daily PPI therapy.

Results of a Survey of 71,812 Persons in the United States

Ever had GERD symptoms 

Had GERD symptoms in the past week 

Persistent GERD symptoms in persons taking daily PPIs 

Factors associated with GERD symptoms in past week

- Female sex
- Non-Hispanic white race
- Comorbidities

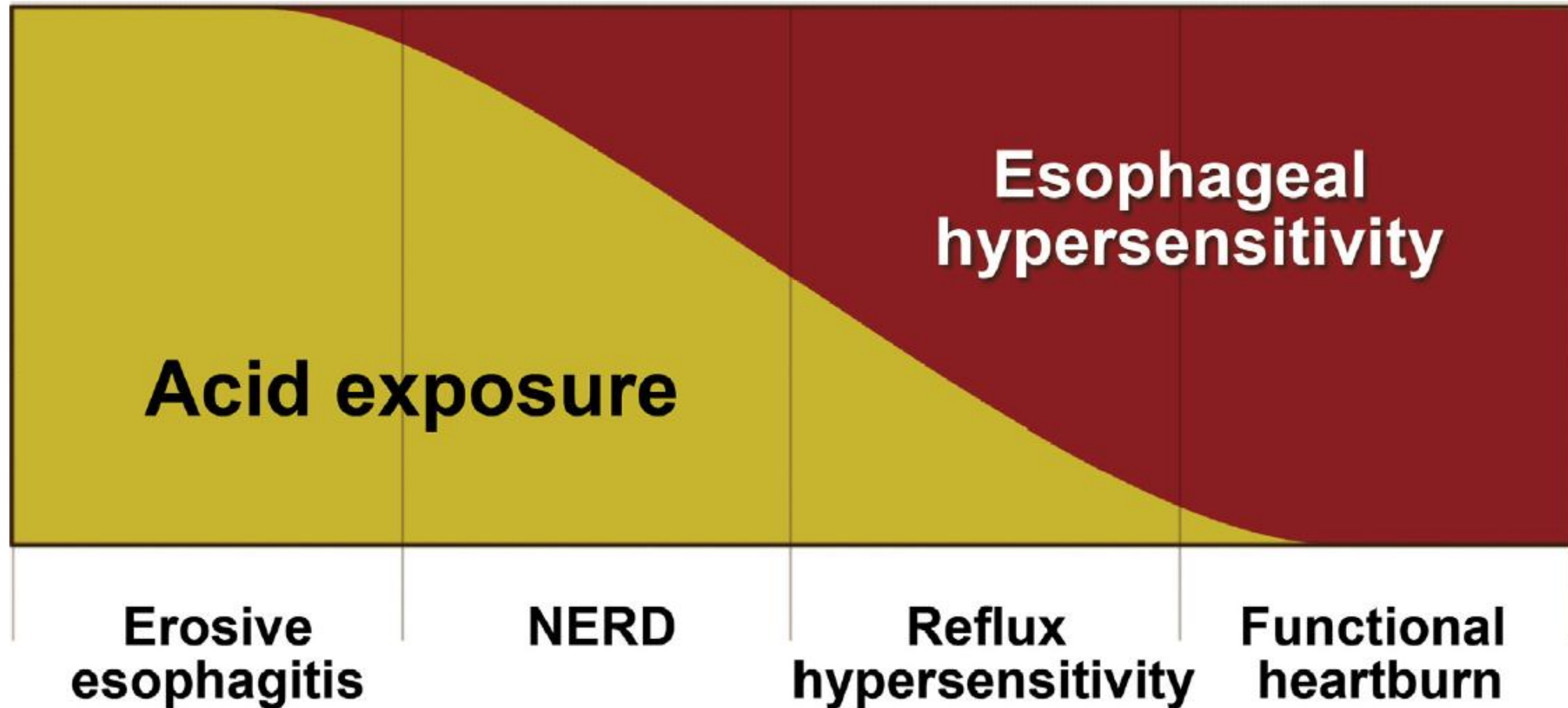
Factors associated with PPI-refractory GERD symptoms

- Female sex
- Latino race
- Younger age

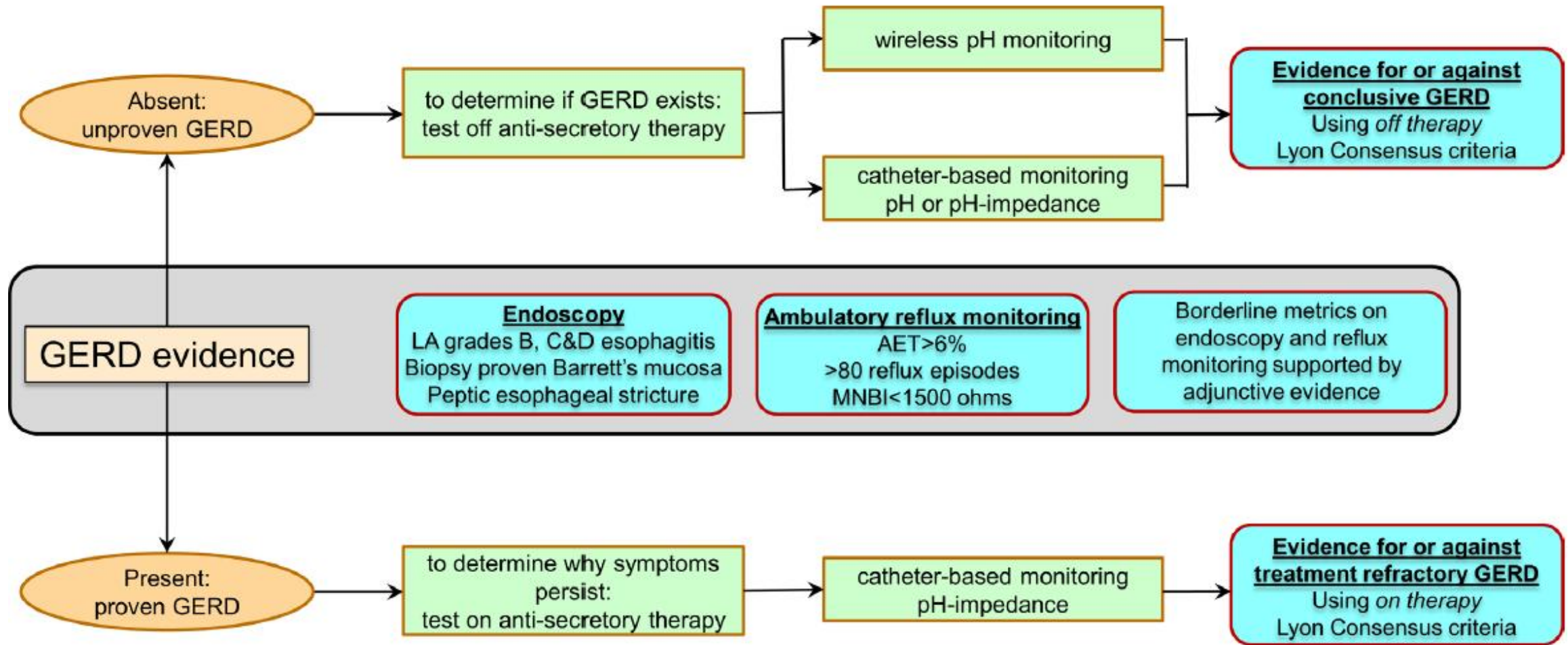
Accuracy of the diagnosis of GORD by questionnaire, physicians and a trial of proton pump inhibitor treatment: the Diamond Study

- Using UE/48h-pH as reference diagnosis (at least 1 of 4)
 - EE LA Gr A-D;
 - AET >5.5%;
 - positive SAP;
 - AET 3.5-5.5% plus PPI responsiveness
- GERD was present in 203/308 (66%) patients presenting to family practitioners with troublesome UGI symptoms
- **Sensitivity and specificity**, of the symptom-based diagnosis of GORD, were **62% and 67%**, respectively.

“Symptom of heartburn should not be considered synonymous with GERD” ----Mittal 2021 Gastroenterol



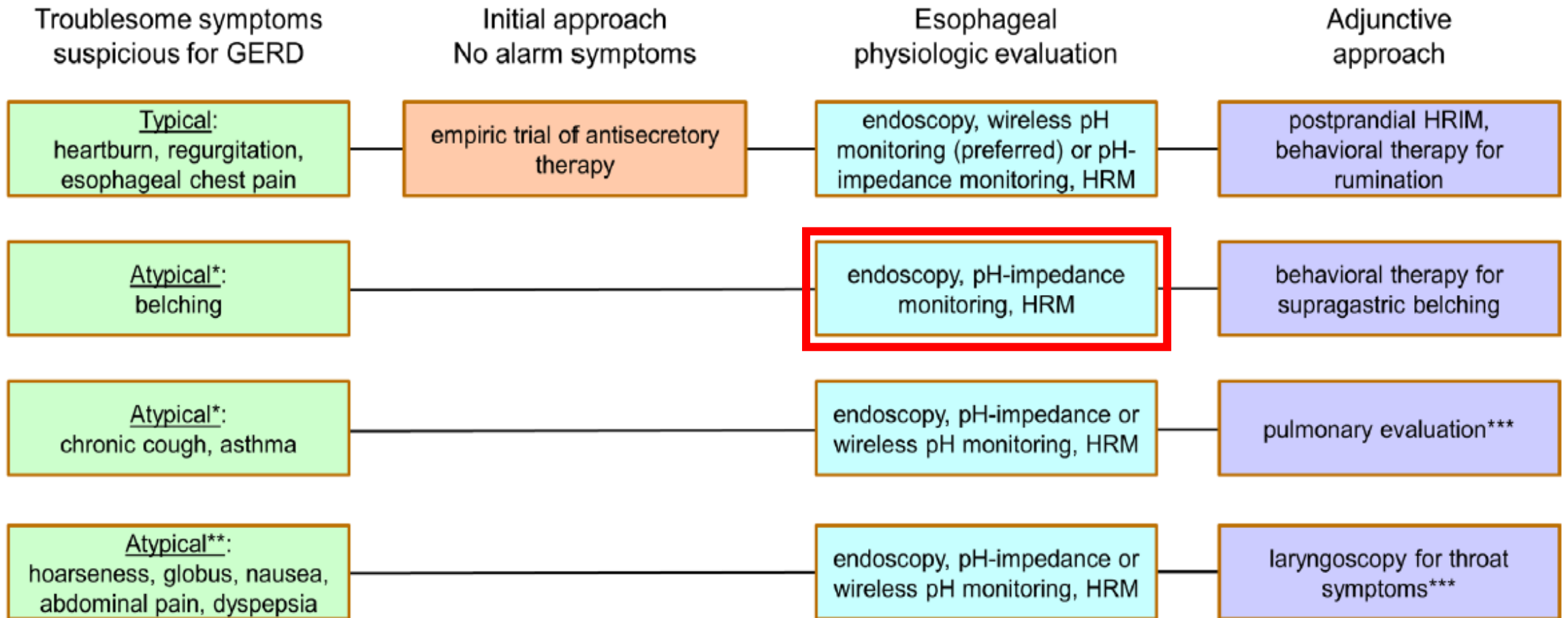
The only test for proven GERD is pH-impedance monitoring using on therapy



Metrics and Thresholds

| | UNPROVEN GERD ENDOSCOPY, WIRELESS pH STUDY, 24 HOUR pH OR pH IMPEDANCE, HRM <i>off therapy</i> | | | PROVEN GERD ENDOSCOPY, 24 HOUR pH IMPEDANCE <i>on therapy</i> |
|---|--|---|--|---|
| | ENDOSCOPY | pH or pH-IMPEDANCE | HRM | ENDOSCOPY pH-IMPEDANCE |
| CONCLUSIVE EVIDENCE FOR PATHOLOGIC REFLUX | LA grades B, C&D esophagitis Biopsy proven Barrett's mucosa Peptic esophageal stricture | AET>6% on 24 hour studies AET>6% on ≥2 days on wireless studies | | LA grades B, C&D esophagitis Peptic esophageal stricture AET>4%, reflux episodes>80 |
| BORDERLINE OR INCONCLUSIVE EVIDENCE | LA grade A esophagitis | AET 4-6% on 24 hour studies AET 4-6% on ≥2 days on wireless studies Total reflux episodes 40-80/day | | LA grade A esophagitis AET 1-4% Total reflux episodes 40-80/day MNBI 1500-2500 Ω |
| ADJUNCTIVE OR SUPPORTIVE EVIDENCE* | Hiatus hernia Histopathologic scoring systems Electron microscopy of biopsies | Reflux-symptom association Total reflux episodes >80/day MNBI<1500 Ω | Hypotensive EGJ Hiatus hernia IEM/absent contractility | Hiatus hernia MNBI <1500 Ω Reflux symptom association |
| EVIDENCE AGAINST PATHOLOGIC REFLUX | | AET<4% each day of study** Total reflux episodes<40/day MNBI>2500 Ω | | AET<1% Total reflux episodes <40/day MNBI>2500 Ω |

Phenotyping, up-front testing is recommended for atypical symptoms



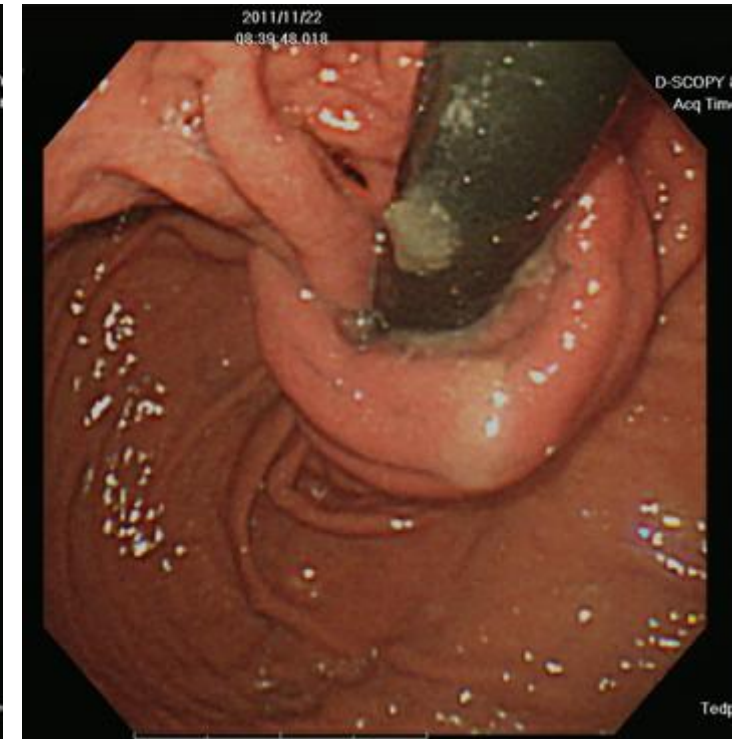
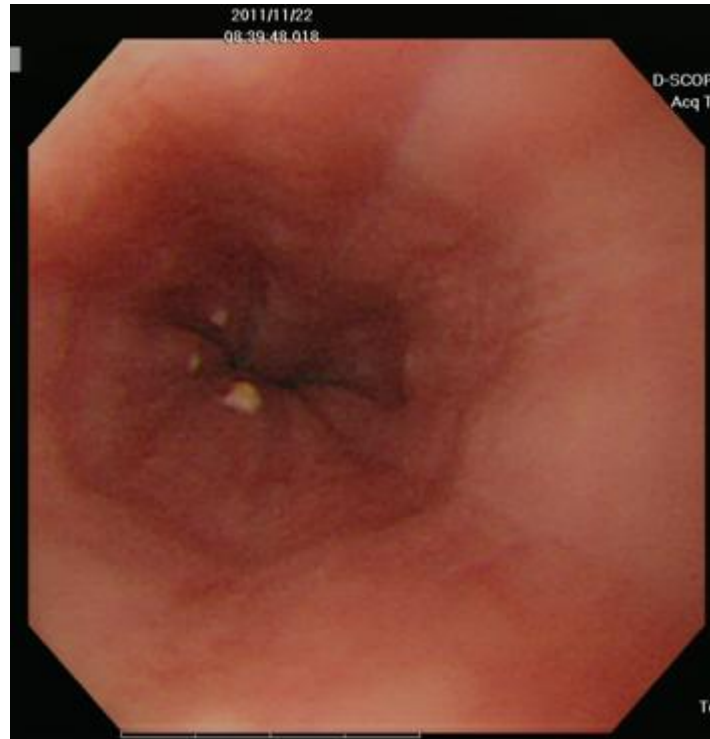
Bottom line: GERD definition evolved

- Lyon 1.0: GERD defined as troublesome symptoms and complications due to reflux.
 - Gyawali, 2018 Gut
- Lyon 2.0: 'Actionable GERD' requires **conclusive evidence of reflux** pathology on **endoscopy or pH tests**, combined with compatible symptoms.
- Purpose: Supports **personalized** treatment decisions.
 - Gyawali, 2024 Gut

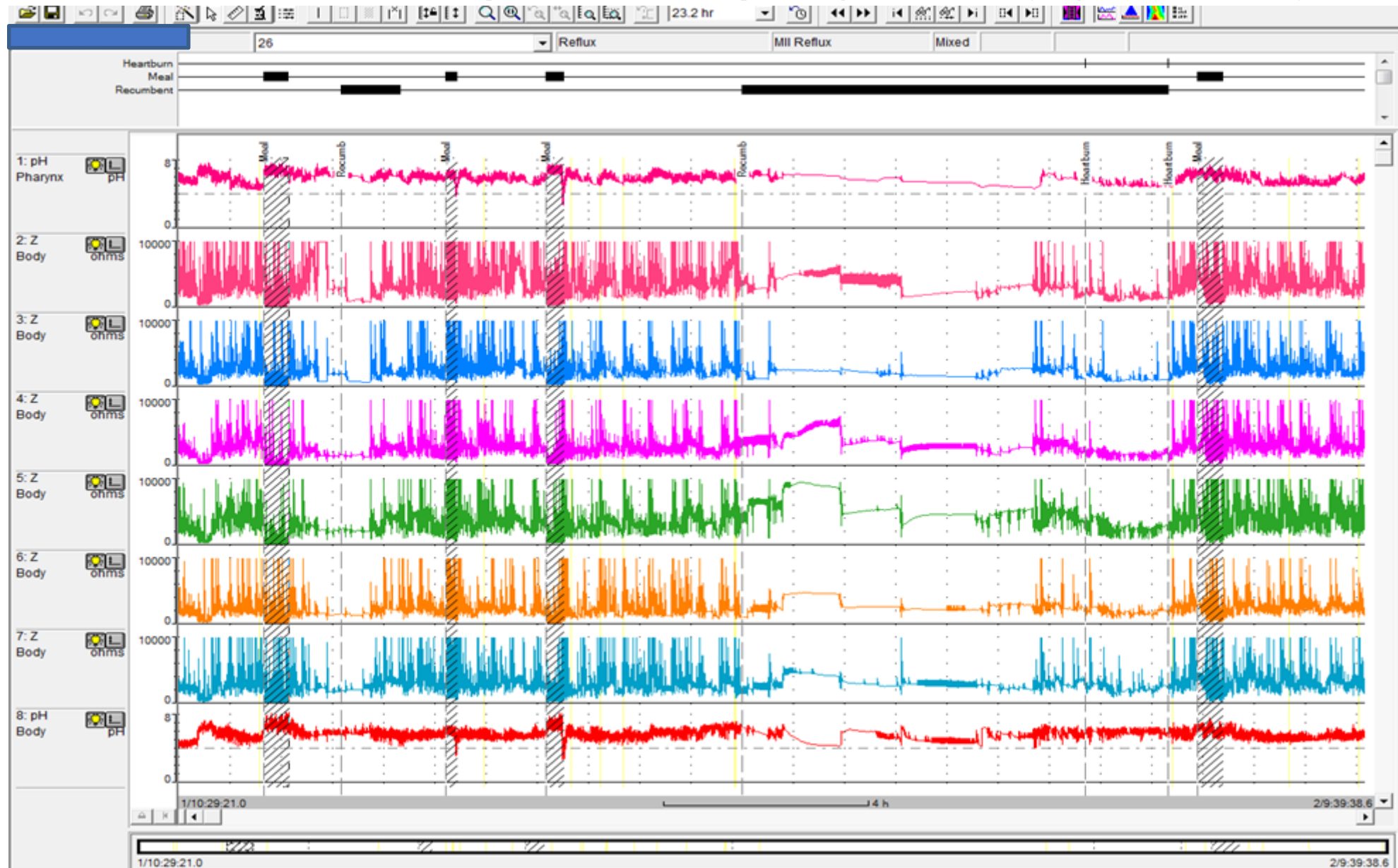
2. Case sharing

Case Sharing (1)

- A 55 y/o male retired teacher with refractory burning throat for 1 year despite **Nissen fundoplication**
- PHx. Neurosis on Inderal and Ativan for 20 y; no SMK, no Alc, no betel nut
- BW 57 Kg, HT: 173 cm



丘O華, 24h impedance-pH (off PPI) (2011.11)

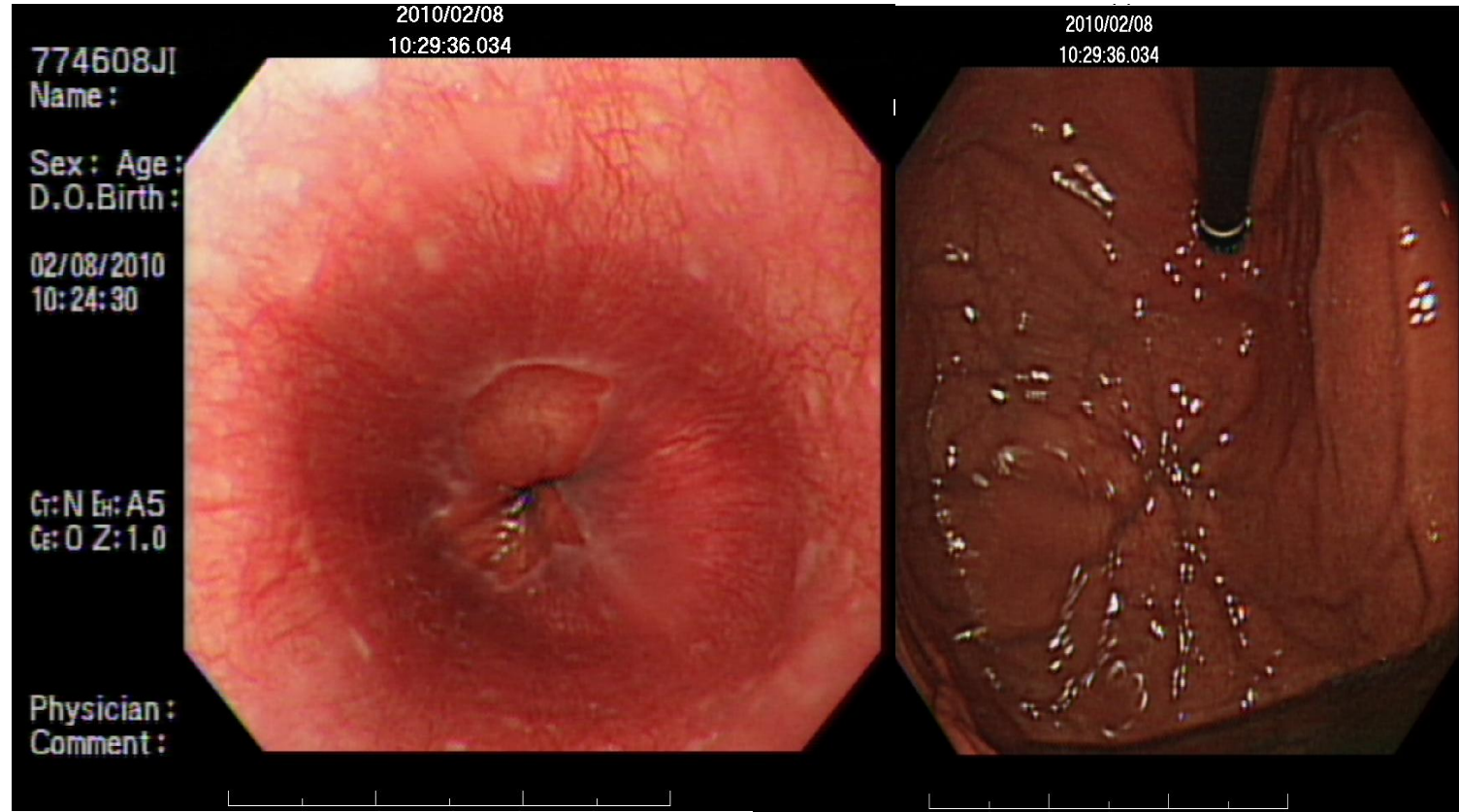


丘O華 Follow-up

| | BL | V0 | V1 | V2 | V3 | Long-term |
|-------------------------|---------|---------|---------|---------|---------|-----------|
| 日期 | 1001109 | 1001201 | 1001229 | 1010126 | 1010221 | 1020611 |
| 用藥 Imipramine | -- | QN | BID | BID | BID | BID |
| Imp%燒喉嚨 | -- | -- | 50% | 40% | 50% | 70-80% |
| RSI(0-45分) | 5 | 12 | 4 | 9 | 4 | 3 |
| RDQ(0-40分) | 4 | 1 | 0 | 0 | 7 | 0 |
| GERDyzer(0-70分) | 65.5 | 66.0 | 16.0 | 34.0 | 19.4 | 19.6 |
| HADS: Anxiety (0-21分) | 18 | 17 | 14 | 14 | 10 | -- |
| HADS: Depression(0-21分) | 19 | 16 | 13 | 9 | 8 | -- |

Case Sharing (2) 周O課，66歲，男，(2010.02)

- Chest pain for >1 month, R/O GERD in LMD, Refractory to PPI, No DOE, CV: Neg in LMD,
- PHx: No HT, No DM, Financial stress
- FHx: Father- esophageal ca
- PE: HT 173 cm, BW 59 kg
- Reflux esophagitis. LA. GrA, HP (-)



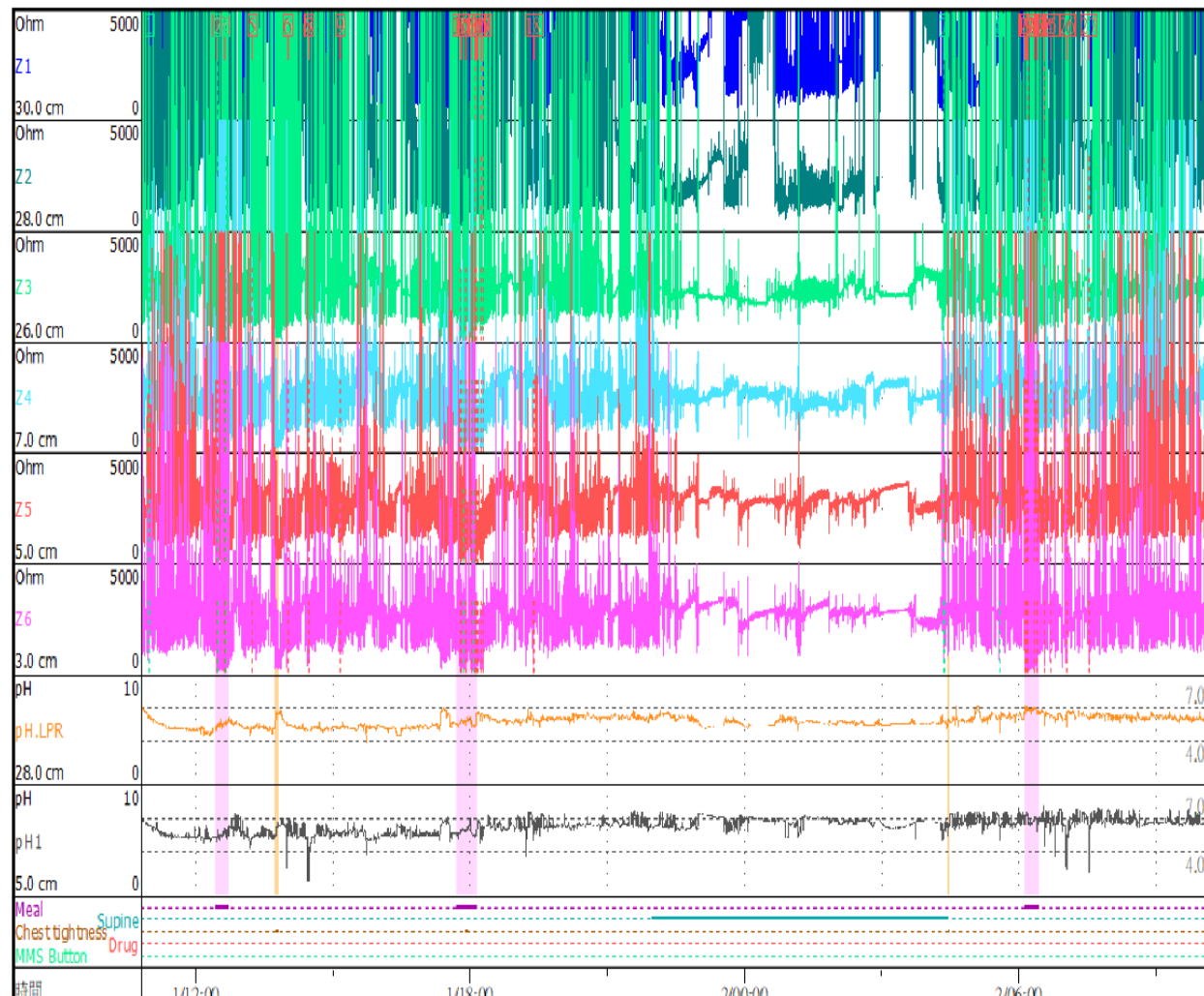
周O課，66歲，男

| 日期 | V0 | V1 | V2 | V3 | Longterm | |
|-------|---------------------------|--|---|---|---|---|
| 日期 | 20100208 | 20100308 | 20100331 | 20100428 | 2010--2023 | 20240508 |
| 用藥 | Pantoloc QD Lexotan QN | Pantoloc BID Lexotan QN | Pantoloc QD Lexotan QN Imimine QN | 慢籤 Pantoloc QD Lexotan QN Imimine QN | 慢籤 Pantoloc QD +/- Lexotan QN | -- 202305-202405未回診 |
| 主訴 | Refractory NCCP | Refractory NCCP +Nocturnal AR, cough | 同左 | 同左 | 同左 | 同左 |
| Imp% | | | OFF and ON | IMP > 50% | Stable | |
| EGD | 2010: EEA | | | | 2012: EEA, BE no IM 2013: BE no IM 2015: BE no IM 2019: BE no IM | 202403: BE no IM, in LMD 2025: BE no IM |
| MIIPH | | | | | | 20240611 |

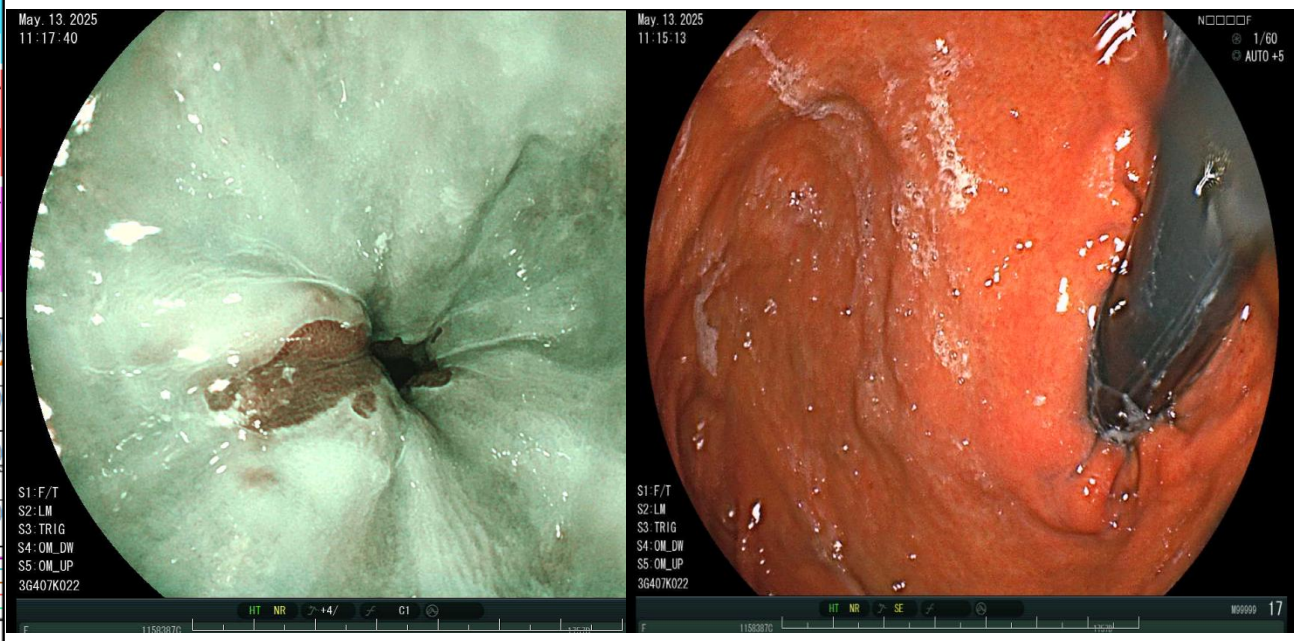
2024/05/08 SUGGEST 24 H PH DUE TO HX OF BE & PNEUMONIA

周○課，66歲，男

2024/06/11 MIIPH: AET: 0.1%,
MNBI: 2823 Ω (>2500), SI: 0, SAP:0



2025/05/13 Endoscopic suspected
esophageal metaplasia, no IM, HP (-)



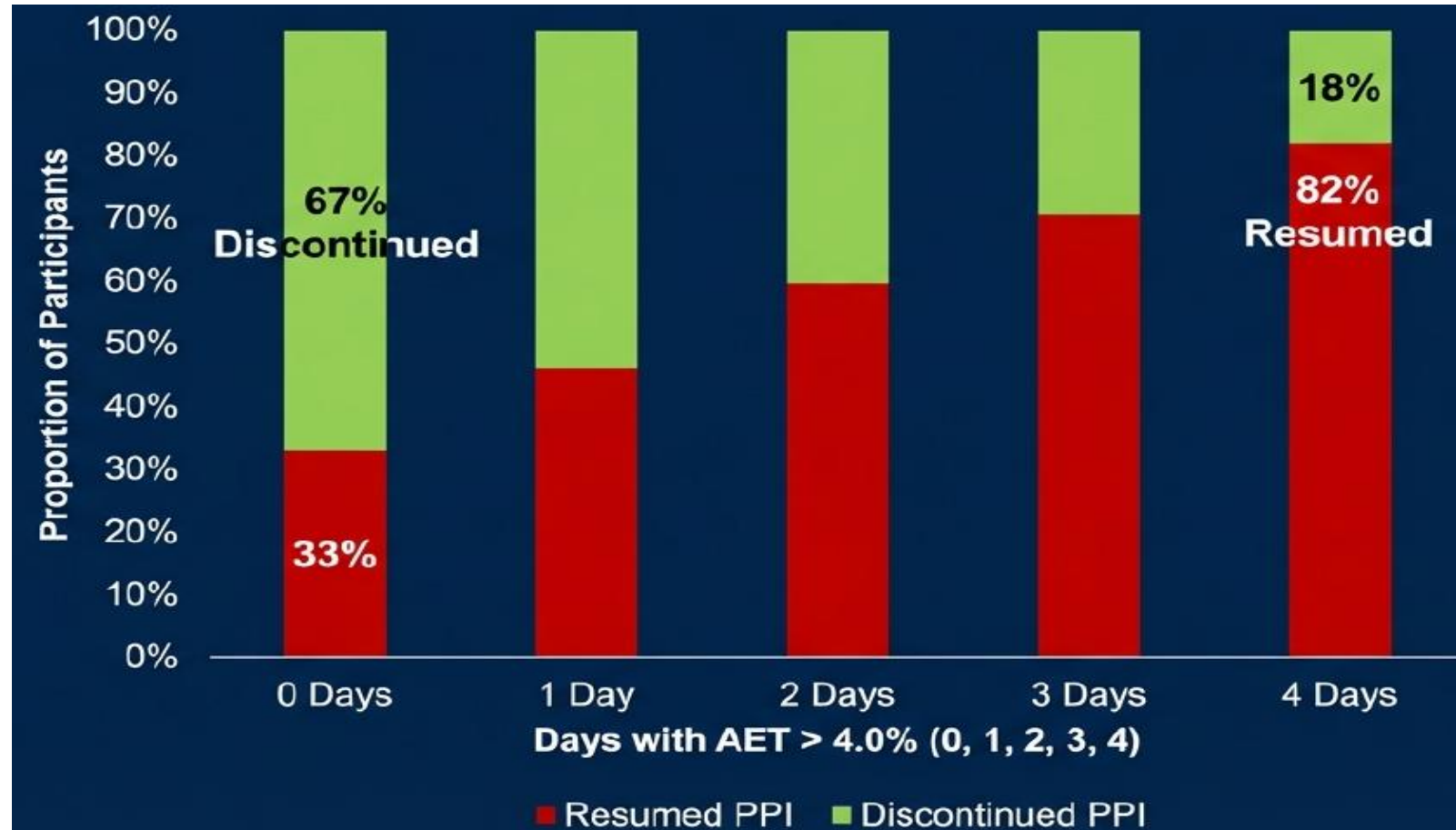
周O課，66歲，男，Patient-reported outcome

| 日期 | 20240512 | 20240626 | 20240919 | 20241021 | 20241111 | 20250208 | 20250602 |
|------------------|----------|----------|----------|----------|----------|----------|----------|
| RSI (0-45分) | 8 | 13 | 8 | 12 | 9 | 9 | 11 |
| EHAS(A) (0-36分) | 29 | 26 | 16 | 17 | 24 | 21 | 15 |
| EHAS(H) (0-24分) | 19 | 17 | 18 | 15 | 14 | 20 | 19 |
| RDQ (0-40分) | 5 | 10 | 4 | 6 | 1 | 1 | 3 |
| GERDyzer (0-70分) | 47 | 39 | 38 | 14 | 15 | 4 | 5 |
| GCSI (0-45分) | -- | -- | 5 | 8 | 5 | 4 | 5 |
| ECKART (0-12分) | 3 | 3 | 2 | 2 | 1 | 1 | 2 |

20240611
MIIPH

20240703
Lexotan QN

Bottom line: Negative monitoring predicts successful PPI discontinuation



Refractory GERD symptoms with 0 day of AET > 4%, had 10x of odds of PPI discontinuation, compared to those with 4 days.

3. Treatment options for GERD–

2022 ACG guideline & 2024 Lyon consensus 2.0

Lifestyle and dietary modification



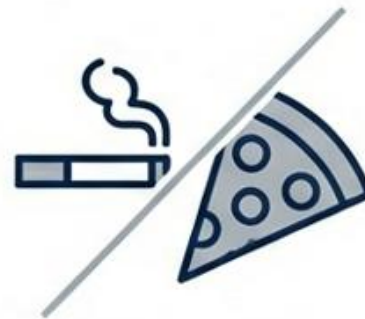
Strongly Recommended: Weight loss (demonstrates a dose-dependent improvement).



Suggested: Elevating the head of the bed for nocturnal symptoms.



Suggested:
Avoiding meals 2-3 hours before bedtime.

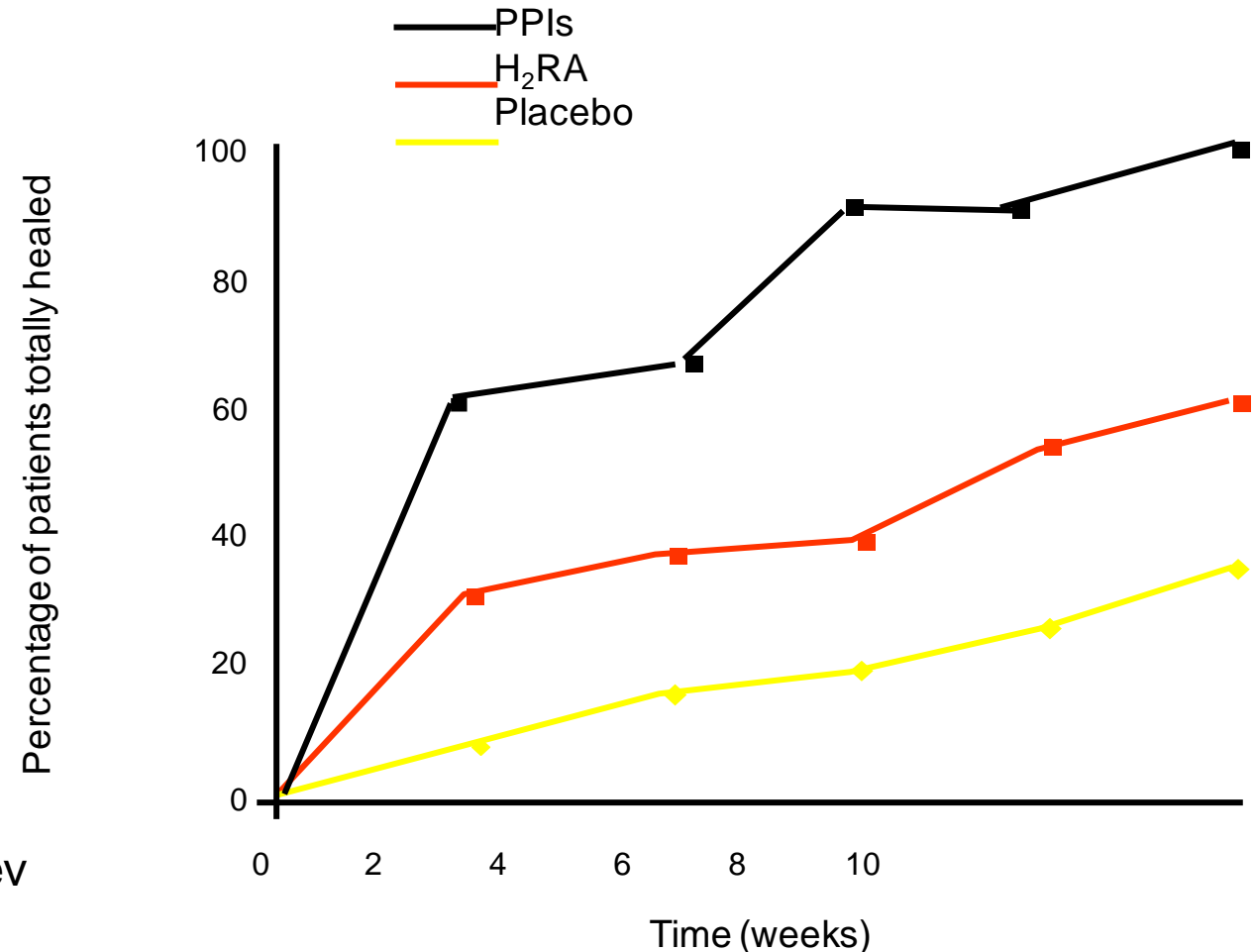


Suggested:
Avoidance of smoking and specific trigger foods only if correlated with symptoms.

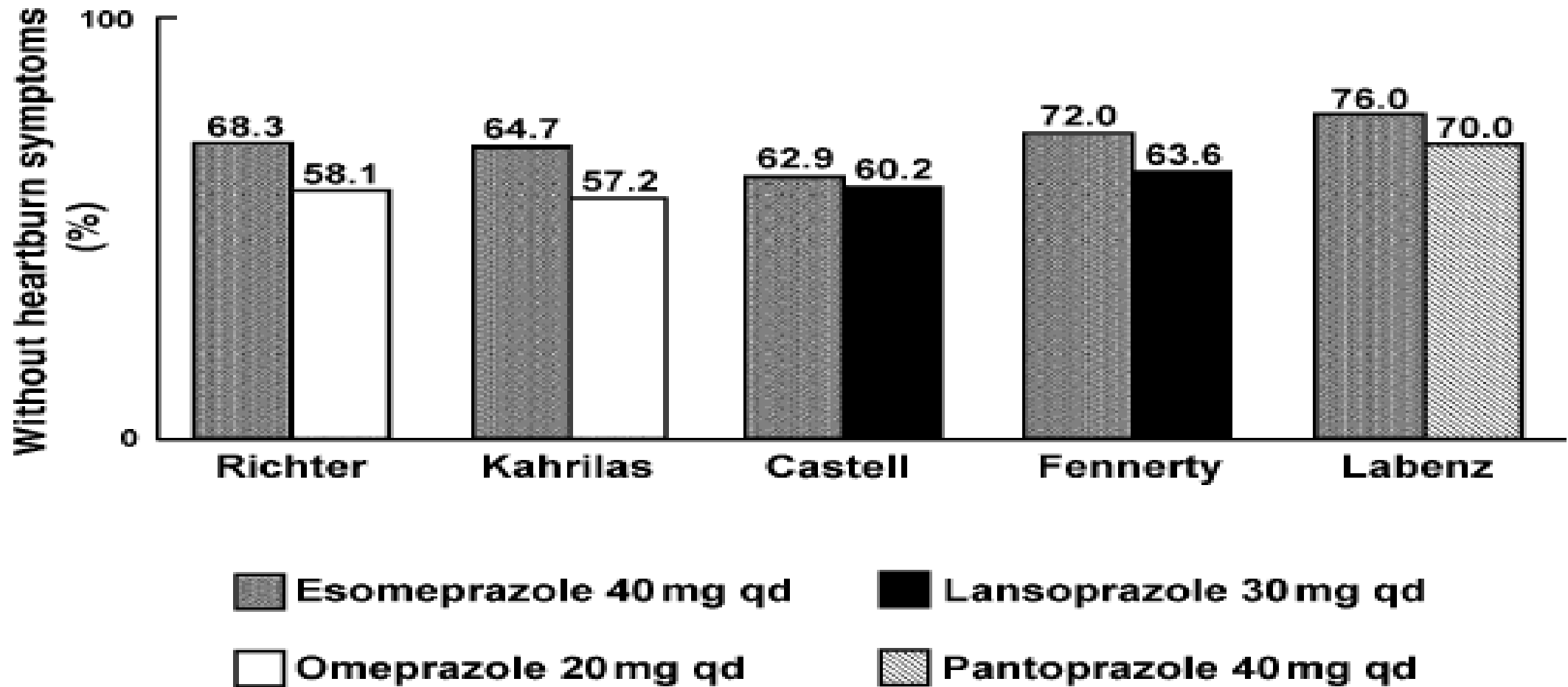
An 8-week empiric PPI trial is the cornerstone of first-line medical treatment

- PPI therapy provides the most effective healing esophagitis and symptom relief in GERD patients.
- PPIs improve quality of life that has been impaired due to GERD symptoms.

Chiba N, 1997 Gastroenterology
Khan M, 2007 Cochrane Database Syst Rev
Havelund T, 1999 Am J Gastroenterol
Katz P, 2022 Am J Gastroenterol

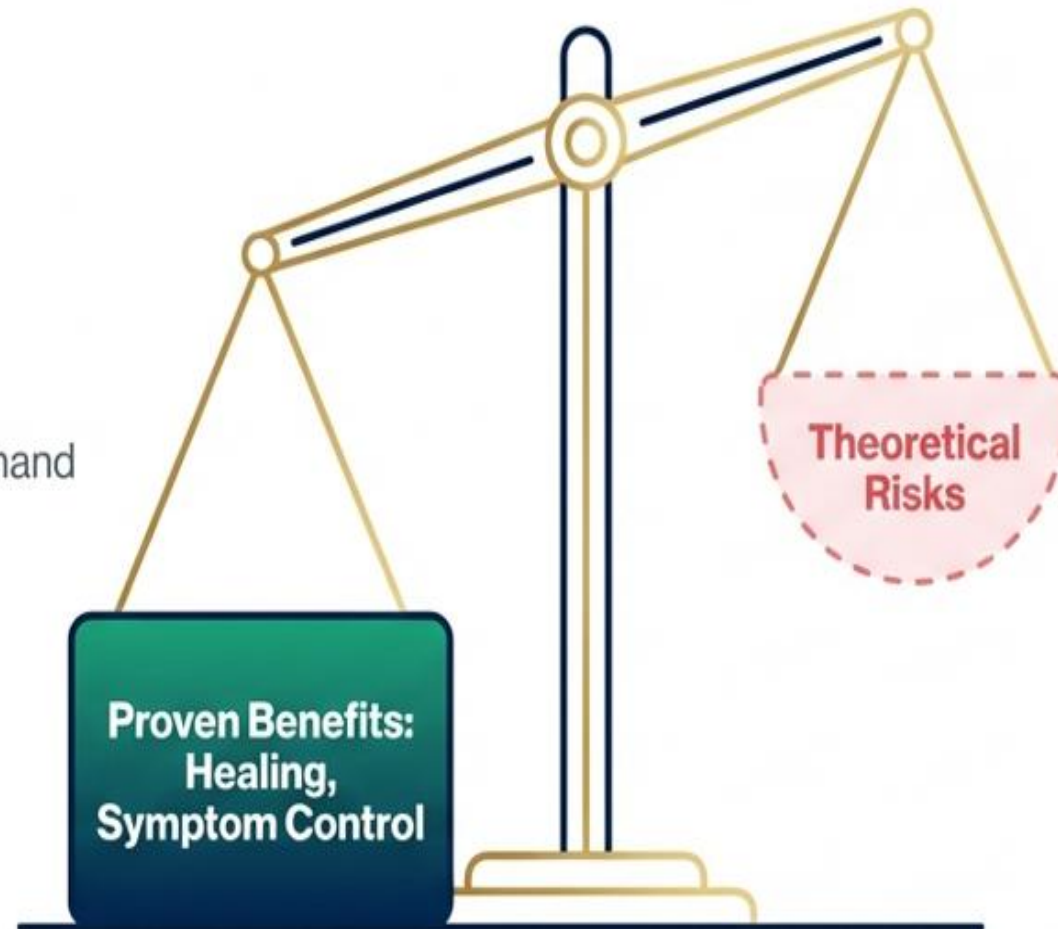


30-40% patients with **reflux esophagitis** had **incomplete heartburn relief** after 8 weeks of PPI therapy



Established PPI benefits outweigh theoretical long-term risks--- minimally effective dose

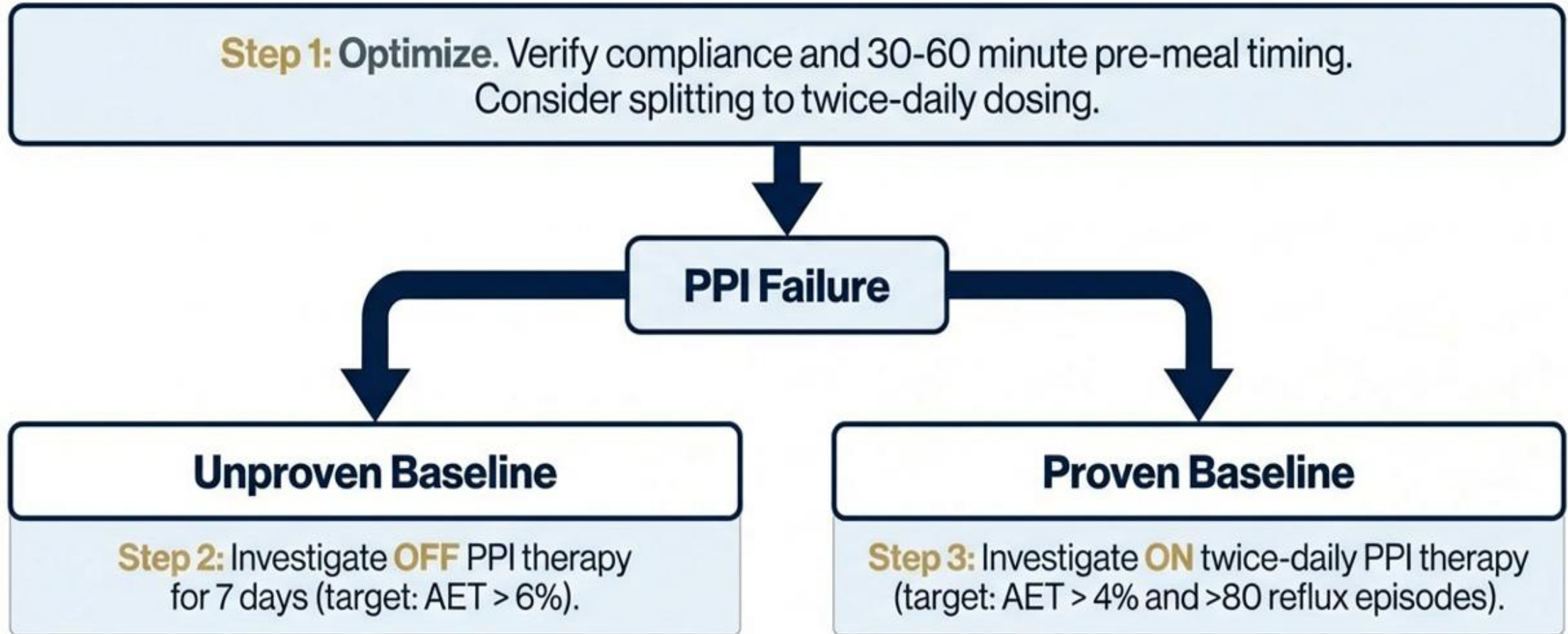
- LA Grade C or D: Requires indefinite, long-term PPI maintenance therapy.
- NERD: Transition to on-demand or intermittent therapy.



Safety Profile: High-quality randomized trials show no significant increased risk for cardiovascular events, bone fractures, or dementia.

Routine monitoring of bone density, B12, or creatinine is not recommended.

Managing refractory GERD requires optimization before escalation



Clearing the medical toolkit of unproven and abandoned therapies



Consider Baclofen (5-20 mg TID) to reduce transient lower esophageal sphincter relaxations—only if objective GERD is proven.

Consider Bedtime H2RA for objective nocturnal symptoms.



Abandon Prokinetics (e.g., metoclopramide) unless objective gastroparesis is present.

Abandon Sucralfate (except during pregnancy).

Surgery is reserved for proven, actionable GERD.
--Pre-op HRM is mandatory to rule out achalasia



Laparoscopic Antireflux Surgery (Nissen Fundoplication)

The gold standard for long-term control.
Best for severe esophagitis (LA Grade C/D)
and large hiatal hernias.

Patient Selection: Non-Obese



Roux-en-Y Gastric Bypass (RYGB)

The primary antireflux surgery of choice for
obese patients, resolving GERD while
addressing underlying anatomic strain.

Patient Selection: Obese (BMI > 35)

Katz, 2022 Am J Gastroenterol

Endoscopic and devices offer effective alternatives for patients unwilling to undergo surgery.



Magnetic Sphincter Augmentation (MSA/LINX):

Superior to PPIs for refractory regurgitation (**96% control** vs. **19% on PPIs**).



Transoral Incisionless Fundoplication (TIF): Effective for troublesome symptoms, restricted to patients without severe esophagitis (LA C/D) or hiatal hernias > 2 cm.

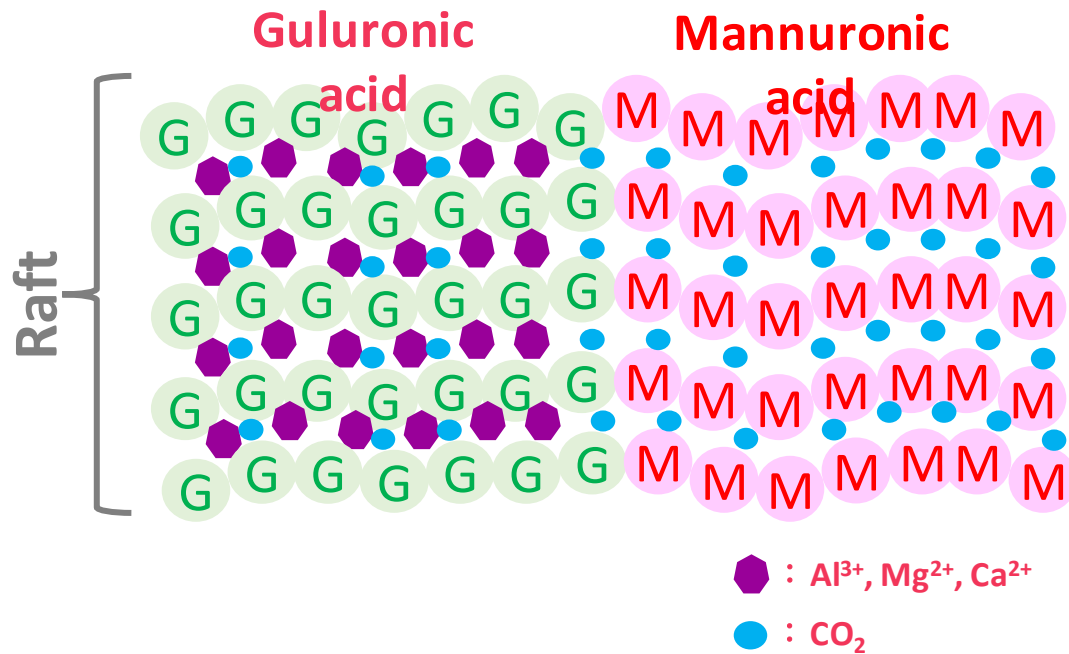
~~Stretta~~

Avoid: Radiofrequency energy cannot be recommended due to inconsistent efficacy data.

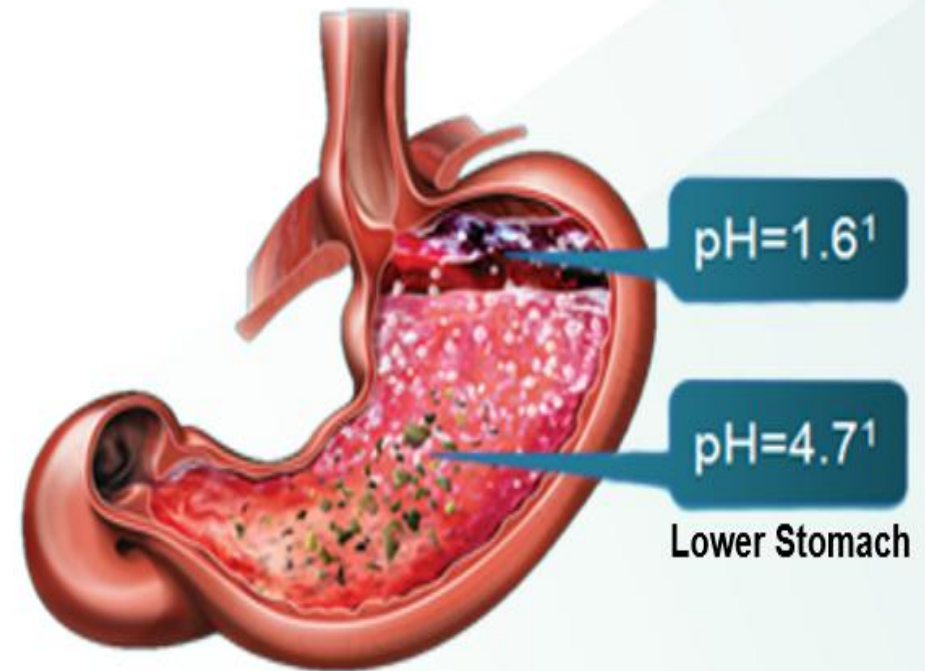
4. Efficacy and safety of Algitab

Alginate forms a raft as a **physical barrier** after contact with gastric acid to **displace acid pocked**

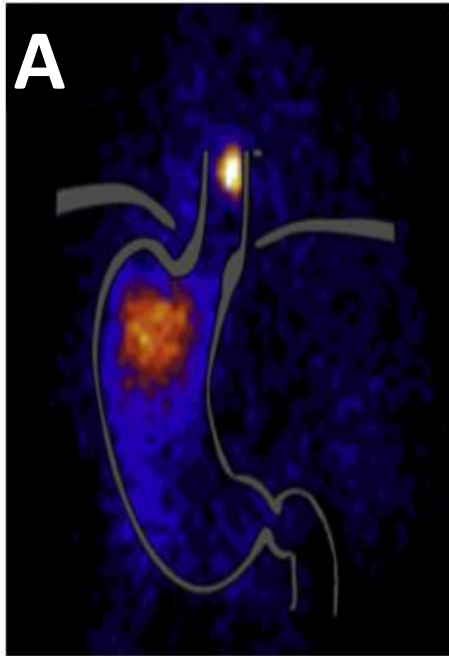
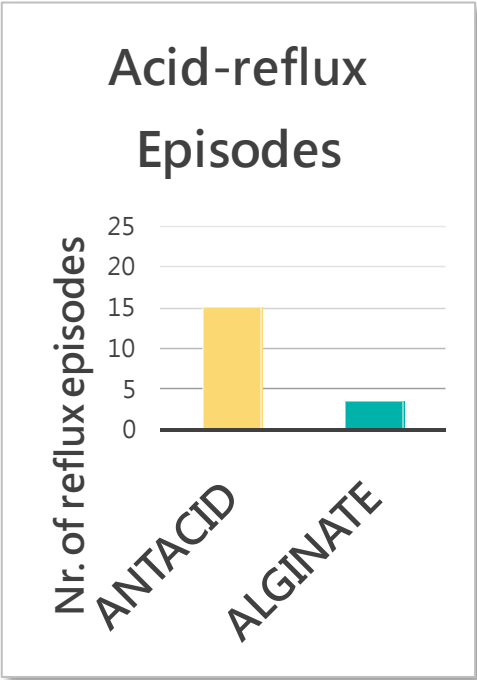
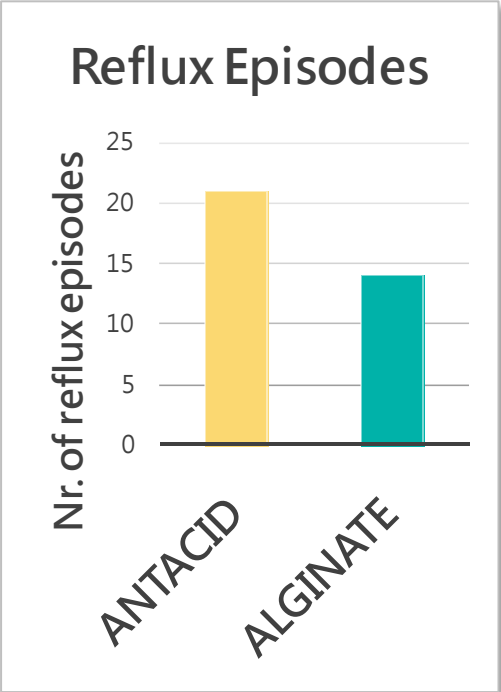
- [Algitab video](#)



Acid Pocket 酸袋

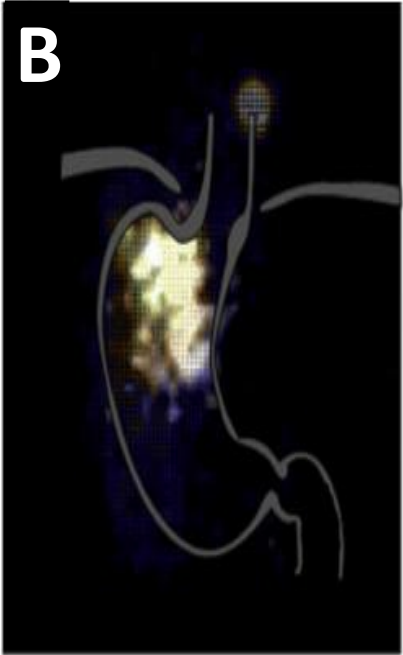
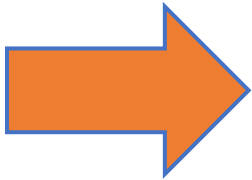


Alginate displaces acid pocket and reduce reflux episodes compared to antacids



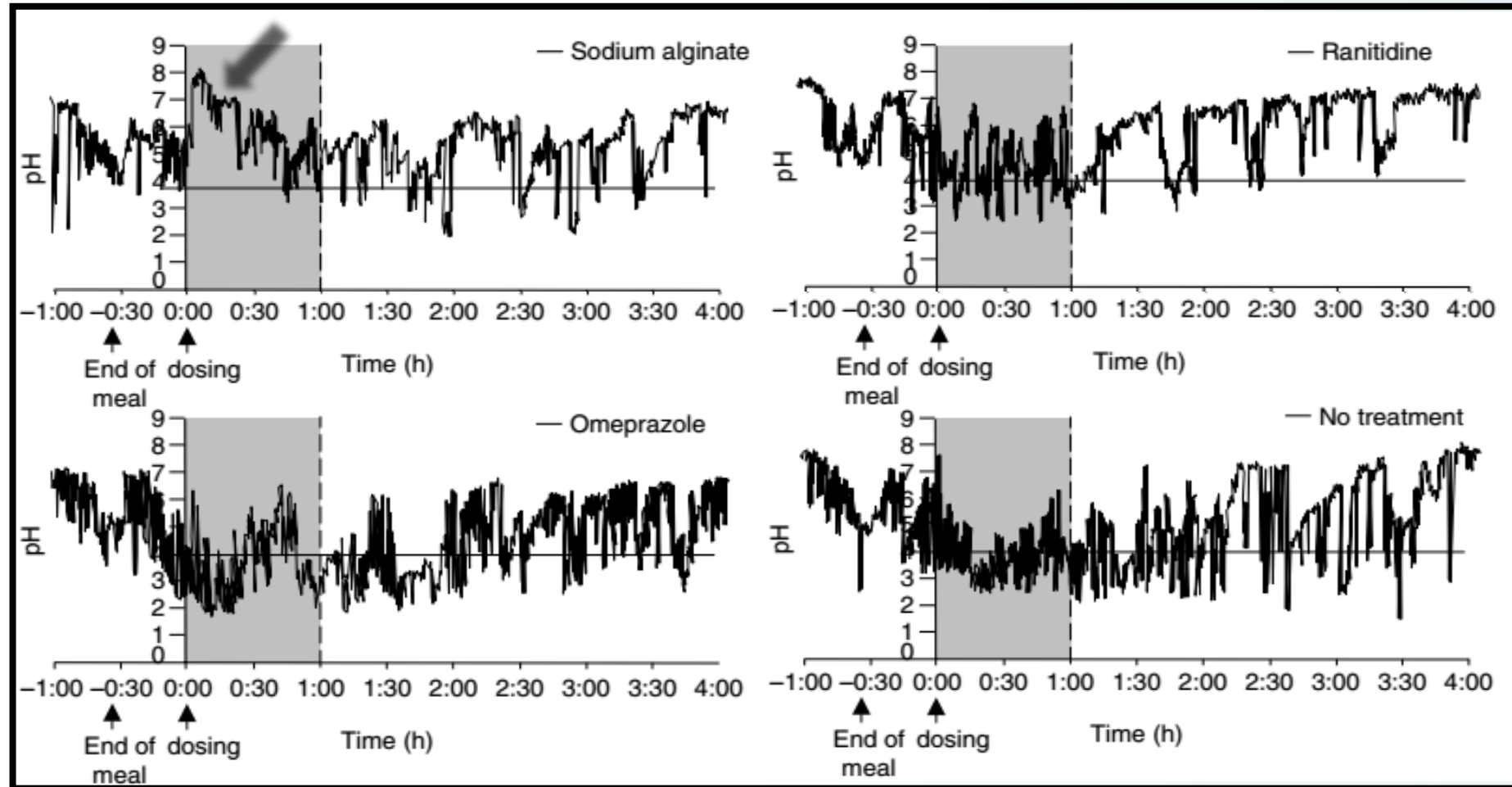
(A) Tc-pertechnetate-labeled acid pocket

Meal
↓ (15 min)
Alginos 20ml
↓ (30 min)
Measurement



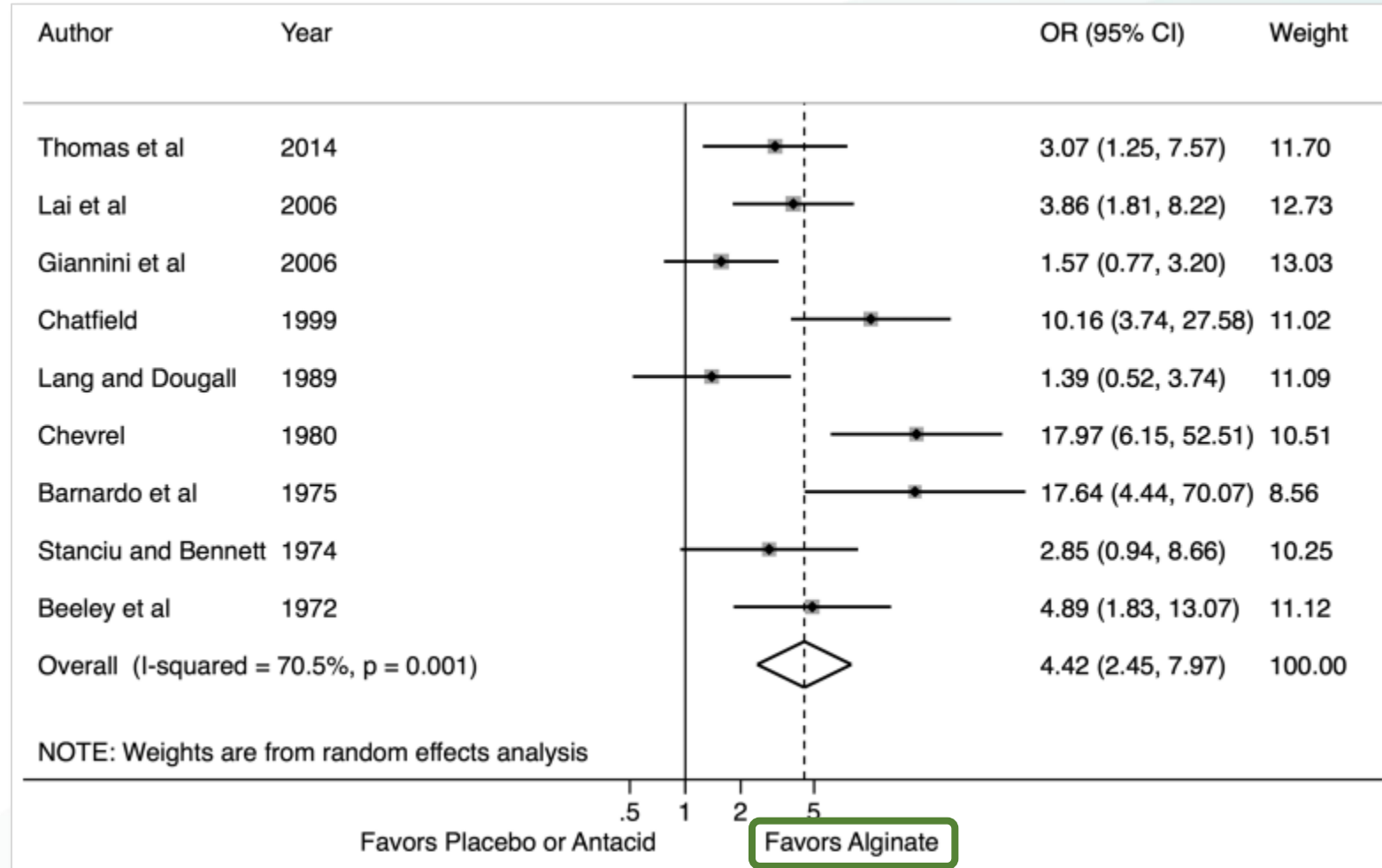
(B) In-labeled alginate

Faster Onset in Alginate Group Compared with PPI and H2RA

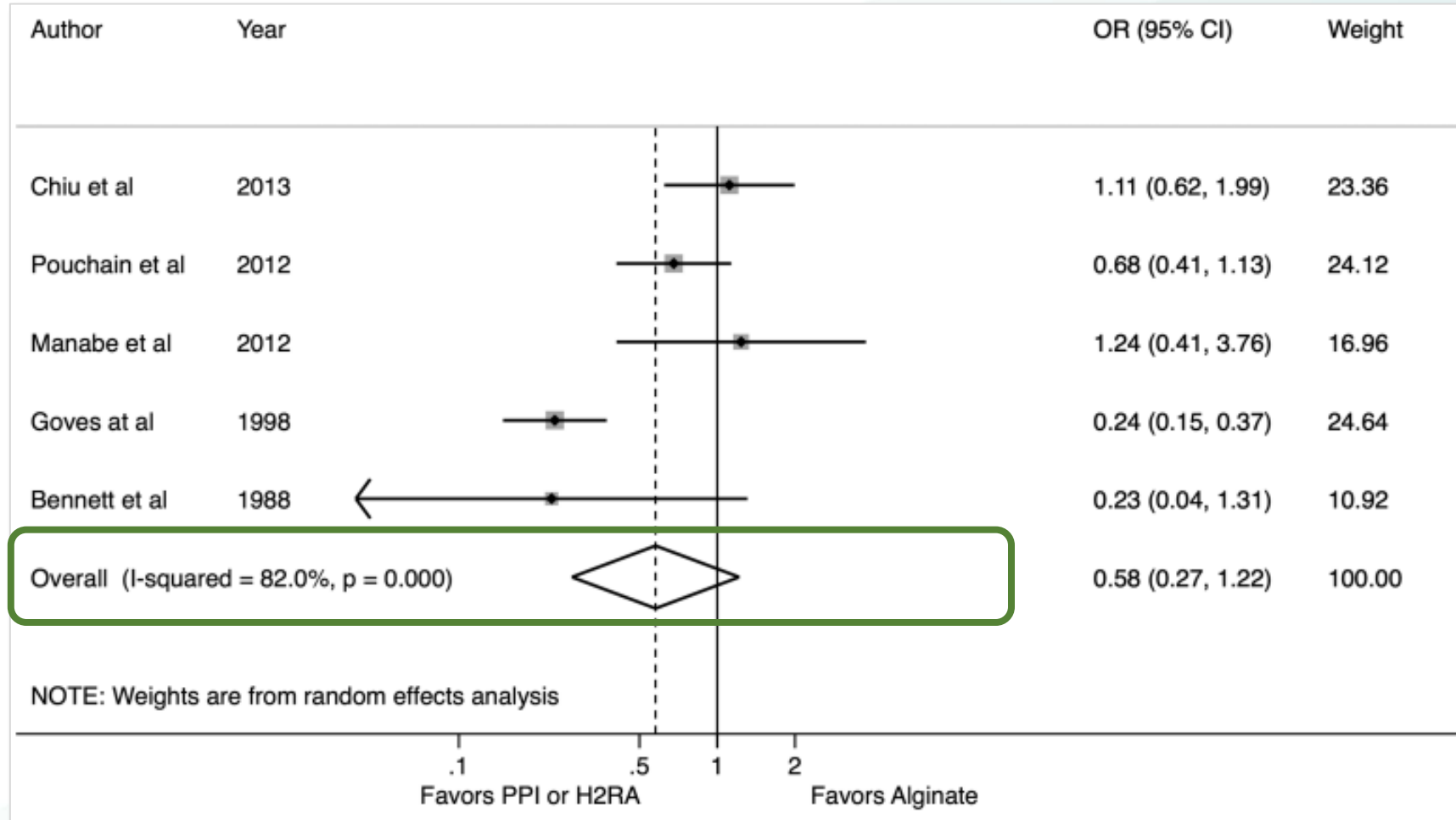


Totally 64 GERD patients were randomized to 4 arms cross-over study receiving a single dose of either Alginate, PPI(omeprazole), H2RA(ranitidine) or placebo.

Alginate Therapy is **Effective** for GERD Symptoms: a systematic review and meta-analysis

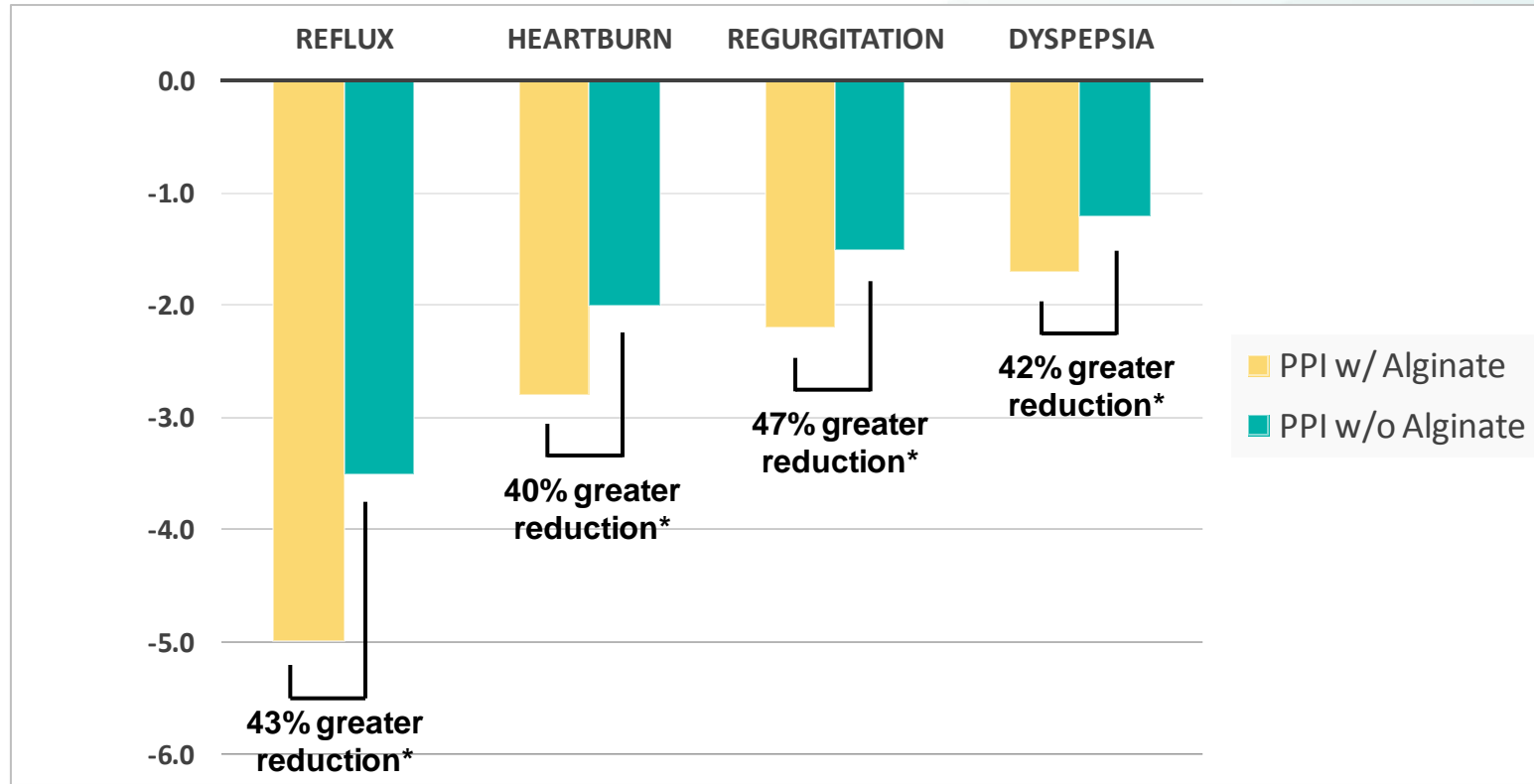


Alginate Therapy is as **Effective** as PPI & H2RA: a systematic review and meta-analysis



Alginate Combined with PPI was Better Than PPI Alone in GERD Patients

HRDQ Score for Patients Administered a PPI with or without Alginate



- HRDQ score : Heartburn Reflux Dyspepsia Questionnaire
- Inclusion criteria: Patients ≥ 18 years with symptomatic GERD, despite daily PPI therapy for at least 4 weeks
- Alginate (n=66): containing 1000 mg alginate taken 4 times daily after a meal for 7 days
- Placebo (n=70): oral placebo taken 4 times daily after a meal for 7 days
- Primary endpoint: Change in HRDQ score from baseline for heartburn and regurgitation



艾胃逆服咀嚼錠 Algitab Chewable Tablets



| | |
|--------|--|
| 劑型 | 咀嚼錠 咀嚼後服用、藥效快於PPI、H2RA |
| 劑量 | Alginic acid 200 mg Magnesium carbonate 40 mg Aluminum hydroxide 30 mg |
| 價格 | 健保給付 3.29元/顆 ICD-10 : K21.9 |
| 效力 | 中和胃酸能力(ANC)約5.3mEq/tab 中和胃酸效果佳 |
| 用法 | 成人 : 2 tabs, TID 飯後 |
| 效果及安全性 | <ul style="list-style-type: none"> • 效果 > 制酸劑 • 採物理性機轉，人體不吸收 |
| 族群 | <ul style="list-style-type: none"> • 健保品項、攜帶方便、不用胃鏡 • 門診：2 tabs, TID for 4 weeks |
| 注意 | <ul style="list-style-type: none"> • 含低劑量鋁，CKD-5期、洗腎不建議服用 • 少見副作用：便秘、腹瀉 |

- ICD-10 code · 健保價：3.29元
- 不需照胃鏡
 - K21.9 **G**astro-**e**sophageal **r**eflux **d**isease without esophagitis
 - K30 Functional dyspepsia
 - K31.89 Other diseases of stomach and duodenum
 - K31.9 Diseases of stomach and duodenum, unspecified
 - K44.9 Diaphragmatic hernia without obstruction or gangrene
 - K21.0 Gastro-esophageal reflux disease with **e**sophagitis
 - K25.9 **G**astric **u**lcer, unspecified as acute or chronic, without hemorrhage or perforation
 - K26.9 **D**uodenal **u**lcer, unspecified as acute or chronic, without hemorrhage or perforation
 - K27.9 **P**eptic **u**lcer, site unspecified, unspecified as acute or chronic, without hemorrhage or perforation

謝謝聆聽 敬請指教