

Pharmacotherapy 2

اللهم إِنَّا نَسْأَلُكَ زِيَادَةَ فِي الْعِلْمِ
وَالدِّينِ.. وَبِرْكَهٍ فِي الْعُمُرِ وَالرِّزْقِ
وَتَمَامِ الْيَقِينِ..❤️

Gastroesophageal Reflux Disease (GERD)

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- اعذرني لو في
نقص ، الى ياكور دان
من كثير واهمين

الجامعة الهاشمية

The Hashemite University



Topic Outline

- General Principles
- Diagnosis (Clinical Presentations, Diagnostic Testing)
- Treatment (Nonpharmacologic Tx, Medications, Surgical Management)
- Complications

GERD: reflux of gastric content into esophagus. الارتداد الحمضي

و من المشكلة انه يرتد للمريء ؟

المشكلة انه المريء غير مصني بـ نزيام في gastric content و ال pH

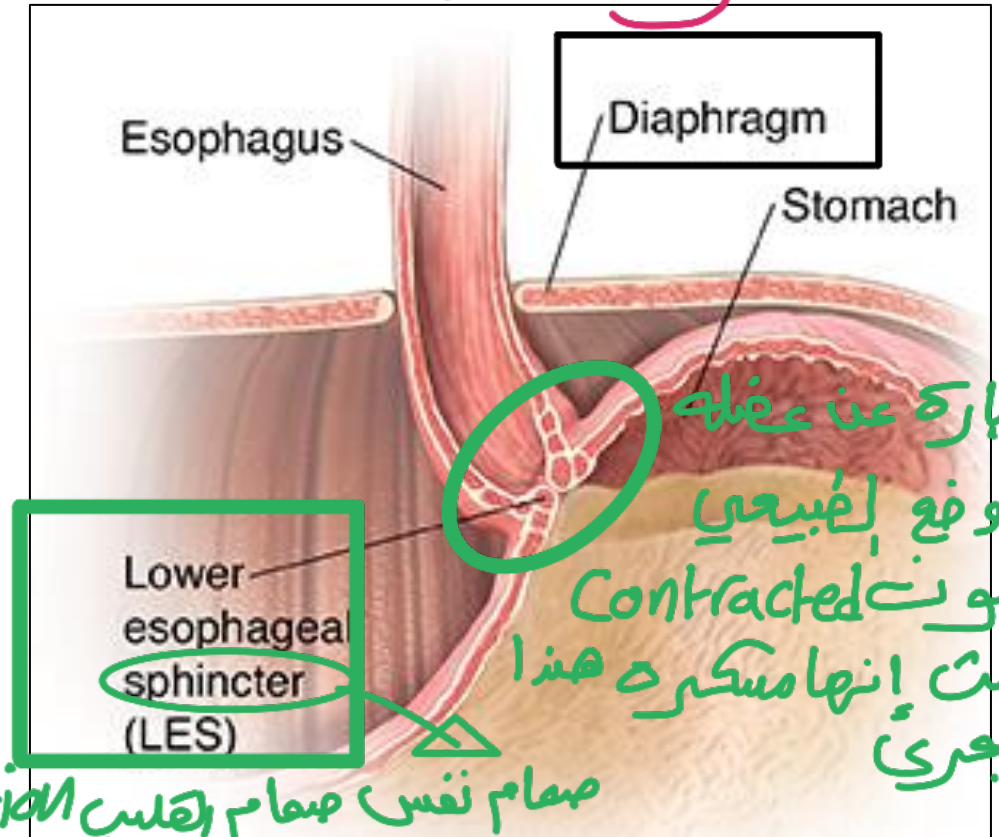
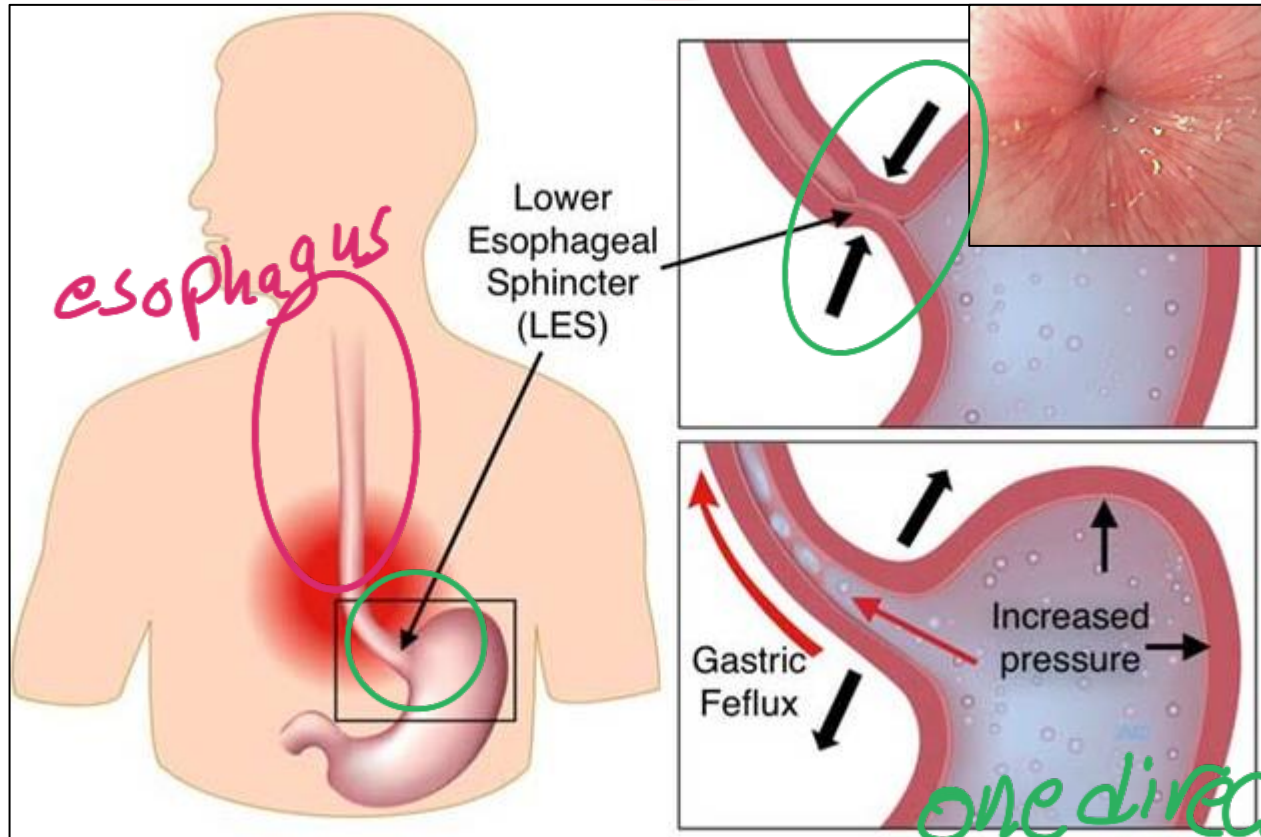
Gastroesophageal Reflux Disease (GERD)

General Principles

GERD is defined as symptoms and/ or complications resulting from reflux of gastric contents into the esophagus and more proximal structures.

Laryngitis → hoarseness
worsening in asthma

oral cavity + Larynx, Lung



one direction صمام نفس صمام هضبة

عباره عن عضله
بالوضع الطبيعي
تكون Contracted
حيث انها مسكوه هذا
المعبر

تسویجے پیر مشان اب gastric content پیر ہا ارتداد؟

① Lower esophageal sphincter pressure
Decrease بالوضع، الطبعی بكون عالي بغيره

[Relaxation of LES]

OR

[Reduction of LES pressure]

② Increase of intra abdominal pressure

+ بكون في ارتداد Normal transit

= - حس بھوری heartburn بتعب مرہ بالشهر
او مرہ كل أسبوعين

③ مالا پس ضيق في منطقة الخصر

Not GERD

يوجد antacide وبتروء ممكن تصيب كل اناس

→ الاشياء يحد ممكن تزيد؟

① pregnancy

② أكل زائد

* as Normal anatomy the LES is Lower than Diaphragm.

كل (Part) أعلى من (Diaphragm) → in Diaphragm Hernia
فوق الحجاب الحاجز (LES) (يسبب بضعه ال LES)

risk
Factor
of GERD

Diagnosis

✓ Clinical Presentation:

- Typical esophageal symptoms include **heartburn** and **regurgitation**.
- GERD can also present as **chest pain**, where an **important** priority is to exclude a cardiac source before initiating GI evaluation.

- **Extraesophageal manifestations** of GERD: cough, laryngitis, asthma, and dental erosions.

- Symptom response to a therapeutic trial of PPIs can be diagnostic, but a **negative response** does not exclude GERD.

Clinical Presentation / Diagnosis of GERD

Diagnostic test -
في حالات يسهل فيها
Complication

Slivation

ارتجاع

warm
sensation

في حال اصاب على المعدة يشكي من
خووه مباشره Chest pain

مشاكل المستشفى تستبعد ال Cardiac Source بالاول.
دائما معها كان المريض.



Challenge testing

- Symptom response to a therapeutic trial of PPIs can be diagnostic, but a negative response does not exclude GERD.

GERD Symptoms
Diagnostic PPI trial
ماکان خطیه

إذا قسنا المريء يعني يمكننا GI بالخط
لكن لو ما قسنا GI Still may be GI بالخط

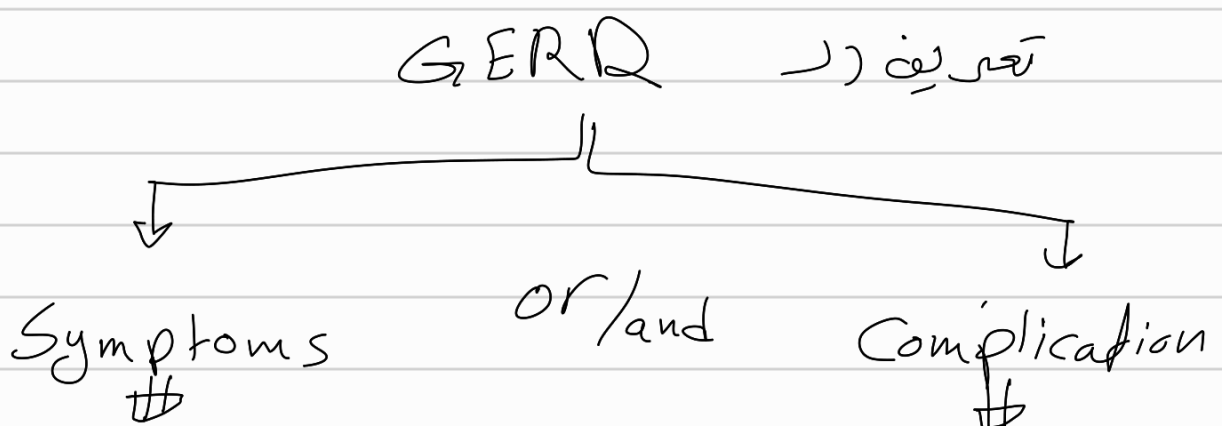
ما ي، الطريقة

① Not standardize:

diagnosis practiac
ماکان نستخرجها لكن من كاله كاون تريفها مع الأعراف

Dose Standardization
كم ال Duration كل دكتور كاله لغير

② Not GI
ما بقدر أنفي من هذا لانه



CLINICAL PRESENTATION

GERD^{1,17,22,23}

Symptom-Based GERD Syndromes (With or Without Esophageal Tissue Injury)

Typical symptoms (may be aggravated by activities that worsen gastroesophageal reflux such as recumbent position, bending over, or eating a meal high in fat):

- Heartburn (hallmark symptom described as a substernal sensation of warmth or burning rising up from the abdomen that may radiate to the neck; may be waxing and waning in character)
- Regurgitation/belching
- Reflux chest pain

Alarm symptoms (these symptoms may be indicative of complications of GERD such as Barrett's esophagus, esophageal strictures, or esophageal adenocarcinoma and require further diagnostic evaluation):

- Dysphagia (common)
- Odynophagia
- Bleeding
- Weight loss

Tissue Injury-Based GERD Syndromes (With or Without Esophageal Symptoms)

Symptoms (may present with alarm symptoms such as dysphagia, odynophagia, or unexplained weight loss):

- Esophagitis
- Strictures
- Barrett's esophagus
- Esophageal adenocarcinoma

Extraesophageal GERD Syndromes

- These symptoms have an association with GERD, but causality should only be considered if a concomitant esophageal GERD syndrome is also present):

- Chronic cough
- Laryngitis
- Wheezing
- Asthma (~50% with asthma have GERD)

أبى المريضة بـ اعراض tissue injury

بترديد
لأعلى

Bleeding
Cough

Red
flag
إذا عن المريضة
مباشرة أوله
المريضة

عاداً

association with each other
نحن مش وافق للت
مين منهم يسبب
التفسر

أولها
upper GI endoscopy

تجشأ ر غازات من الفم

ضرباً من الفم
فستان تتجلى
gastric content

①
③

①

②

Tissue injury

كاز
نعال
منها

→ slow motility & GERD (من الأسباب يأتي تآكل و الـ GERD من الـ GI)

* طبعا ما قصروا الطواب بالـ استشارة هون لكن
الدكتور ممكن انه كلو ر2 تحكي عنه ليهيك ما كتبت استلترهم.

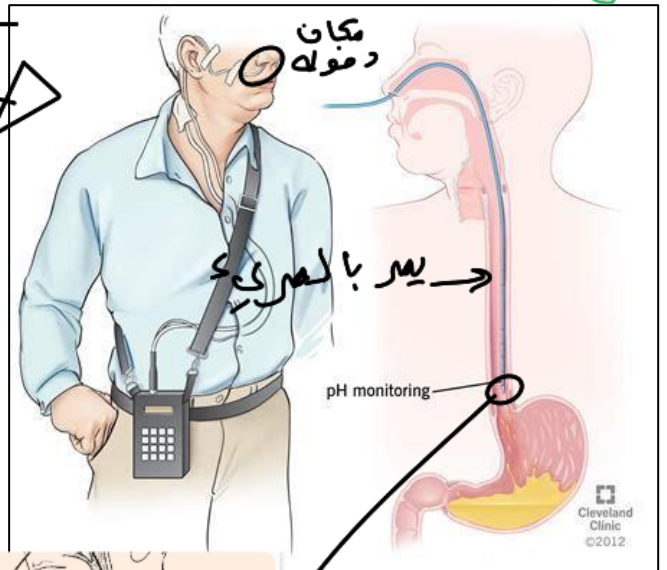
✓ Diagnostic Testing:

- Endoscopy with biopsies
- Ambulatory pH monitoring
- Esophageal manometry

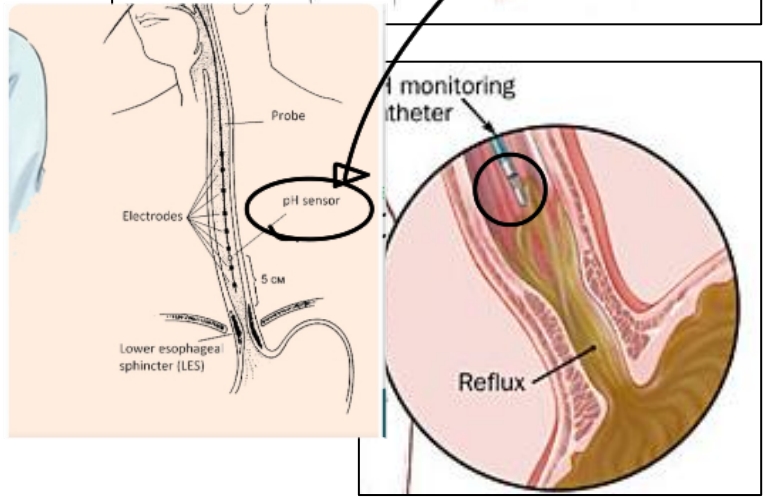
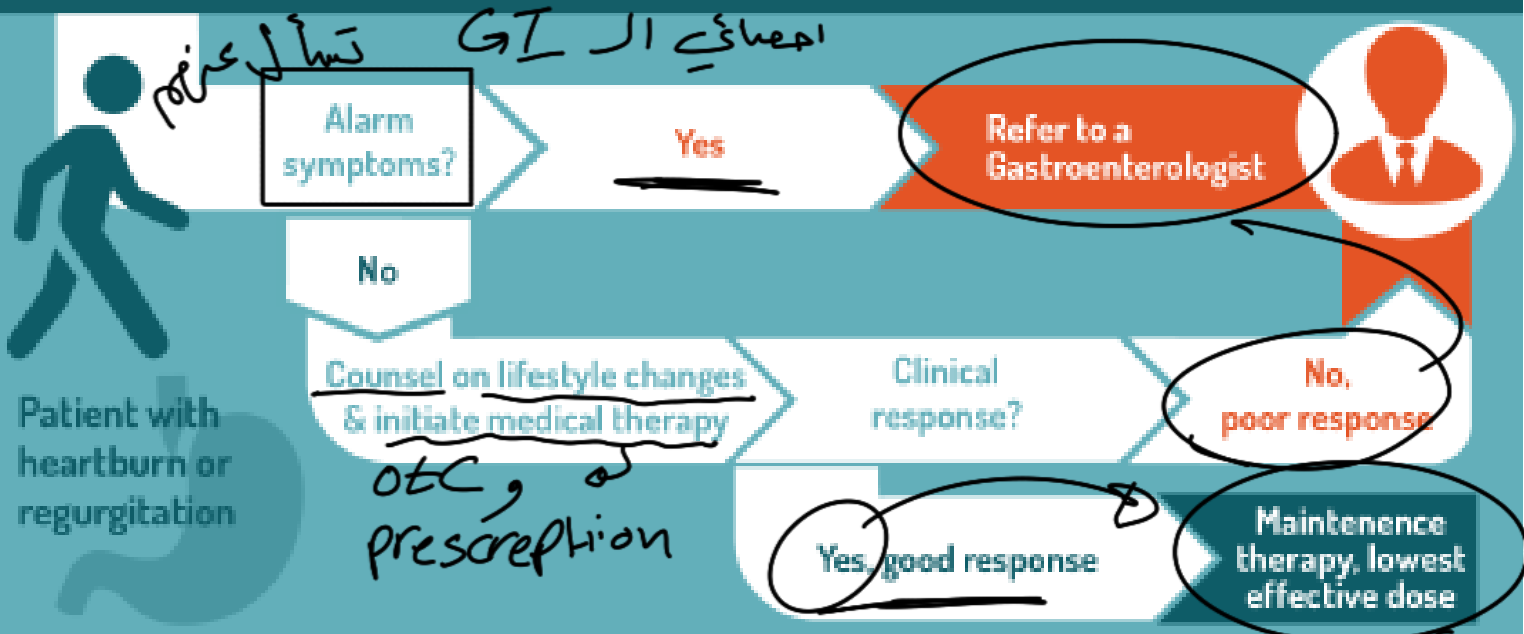
→ direct visualisation of esophagus نشوف اذا في تضيق او خروا يا مختلفه , esophagitis , bleeding

motor function of esophagus (muscle, motility) حالات خامة

24 h بحر ف عن طريقة pH كل تنزل كبة 4
ولكم حركة تنزل ومشي



When to Refer to a Gastroenterologist:



يكمّل على الـ لدر و با نقل دوز فعاله

* What is the main target of treat?

• increase the pH

are we prevent the reflux?

No, still there a reflux
but we work on Gastric
content and increase the pH

is there a treatment approaches prevent
the reflux?

yes, surgery, baclofen

Lowest effective dose:

symptoms relief

ويعالج GERD، لكن إذا لم يفرح

تلك الأدوية في high tendency إلى زيادة Relax وترجع
الاعراض

Low dose maintaining بالتي عادةً نمنح على
• effect

Treatment

(حالتنا نفس ساعة على صفيحة)

واحد من كومتاتكم يلي طالعه بالريكورد 🤖

✓ Nonpharmacologic Treatment with Lifestyle Modifications:

① Elevate the head end of the bed (increases esophageal clearance). Use 15-20 cm blocks under the head side of the bed

نرفع راسية

السوي حشاش
الموذي موي حشاش
يكونا موفوعين
وصراعين

فائدة

② Weight reduction (reduces symptoms) in obese patients

↓ intraabdominal pressure

③ Avoid foods that may decrease LES pressure or increase transient LES relaxation (fats, chocolate, alcohol, peppermint, and spearmint)

④ Include protein-rich meals in diet → LES pressure

تزيد الـ LES pressure

⑤ Avoid foods that have a direct irritant effect on the esophageal mucosa (spicy foods, orange juice, tomato juice, and coffee)



انتبهوا للملاحظات

decrease LES pressure.

increase transient LES relaxation

حلياً Avoid اى
اشي يعمل

معني احنا بدنا نقلل relaxation بالتالي تصنع اى

اشي يعمل increase

وبدنا نزيد ال Pressure فنمنع اى اشى

يعمل decrease

- Behaviors that may reduce esophageal acid exposure:

- Eat small meals and avoid sleeping immediately after meals (sleep after 3 hours)
- Stop smoking
- Avoid alcohol
- Avoid tight-fitting clothes
- Always take drugs in the sitting upright or standing position and with plenty of liquid, especially for those that have a direct irritant effect on the esophageal mucosa (eg, bisphosphonates, tetracyclines, quinidine, potassium chloride, iron salts, aspirin, NSAIDs)

صبحہ، لوبا ۽ زم مع کاسہ مع کاسہ مع رشفہ

oral

فیرس فمراٹ
فیرس سلفاٹ
فیرس اسیٹاٹ

- ✓ Medications

ہوندرے جنکی عنیم ل General
والتفا میل بالجد اول

- ① Intermittent or prophylactic OTC antacids, H2RAs, and PPIs are effective with mild or intermittent symptoms. not frequent جی و تروے
- ② PPIs are more effective than standard-dose H2RA and placebo in symptom relief and endoscopic healing of GERD.

3

Modest gain is achieved by doubling the PPI dose in severe esophagitis or persistent symptoms.

4

Continuous long-term PPI therapy is effective in maintaining remission of GERD symptoms, but the dose should be decreased after 8–12 weeks to the lowest dose that achieves symptom relief.

5

Abdominal pain, headache, and diarrhea are common side effects.

6

Bone demineralization, enteric infections, CAP, and reduced circulating levels of vitamin B12 are reported in observational studies, (but conclusive cause-and-effect data are lacking) and benefits of PPI therapy continue to outweigh risks.

هل من مسبب من؟

هل فعلاً "PPI" قد Osteoporosis وكلها شياء

بشيء ذكرناها؟ الحرقه Lacking من الحرقه

الشرح تحت :-

MEDication of GERD:-

① Mild or intermittent symptoms not frequent

او متناهي "حاريفت بيصرف اذا اكل اكلة معينة يصيبه heartburn

فيسوحنه as prophylactic

بالعادة ما نستخدم

GERD

"مجر"



OTC antacid, PPIs, H₂RA

② الة كثر فعاله لتخفيف الاعراض

و لعلاجه اي اشئ ظهر بال endoscopy على

ال esophagitis PPI

(more effective than

H₂R_s and placebo)

③

اذا المريفت ماشي على PPI لكن الاعراض مستمرة (Persistence symptom)
أو عنده التهاب حاد (sever esophagitis) ممكن ان
اعمل دبل للدوز و الة فائدة لكنها مش كثير
تحقق على المريفت (Modest gain)

4) Lowest effective dose هياي لنقله قكي عن ال
باي حكيًا عنهم قبل شوي :

انه احيا عالينا ال GERD و control symptom
healing و كل اشي تمام

الآت بدنا خافض على هذا الكرام ، كيف ؟

by long term ppi → effective in maintaining
عند المريض للمحافظة

ما يقابل surgery

→ طبقاً بعد 8-12 week

decreased to the lowest dose that achieves symptom relief

Lowest effective Dose = effective
عند لا

6) Bone demineralization : Bone mineral density
تقلوا ال

enteric infections : ذكرت اساء ما فمهم

CAP :

acid suppression → 30 days short term
→ colonization → only aspiration → ممكن
in gastric Larval proximal structure
Lung Lung

reduced circulating levels of vitamin B12 :

intensing factor

observational studies, Not interventional studies
pp1 clinical مع راقب المرضي يوحنا

benefits of PPI therapy continue if ...highly indicated...to outweigh risks.

benefit ← risk . pp1 الا يذا عنه يحتاجها . عند المريض

TABLE 49-1 Foods and Medications That May Worsen GERD Symptoms

Foods/Beverages	Medications
Decreased Lower Esophageal Sphincter Pressure	
Fatty meal ✓	<u>Anticholinergics</u>
Carminatives (peppermint, spearmint) ✓	<u>Barbiturates</u>
Chocolate ✓	<u>Caffeine</u>
Coffee, cola, tea ✓	Dihydropyridine calcium channel blockers DHPCCB
Garlic ✓	<u>Dopamine</u>
Onions ✓	<u>Estrogen</u>
Chili peppers ✓	<u>Nicotine</u>
Alcohol ✓	<u>Nitrates</u>
	<u>Progesterone</u>
	<u>Tetracycline</u>
	<u>Theophylline</u>



Direct Irritants to the Esophageal Mucosa

Spicy foods ✓	Aspirin ✓
Orange juice ✓	Bisphosphonates ✓
Tomato juice ✓	Nonsteroidal anti-inflammatory drugs (NSAIDs)
Coffee ✓	Iron ✓
Tobacco ✓	Quinidine ✓
	Potassium chloride ✓

part 1 ✓

Not Guideline

الشرح 3 صحت ↓

TABLE 49-2 Evidence-Based Treatment Recommendations for GERD in Adults^{1,24}

Recommendation	Level of Evidence and Strength of Evidence ^a
① Lifestyle Modifications - Weight loss in overweight GERD patients or those who have recently gained weight. Moderate, Conditional - Elevation of the head end of the bed and avoidance of food 2-3 hours before bedtime if nocturnal GERD symptoms present. Low, Conditional - Routine elimination of foods that can trigger reflux is not recommended in the treatment of GERD. Low, Conditional	
② Acid Suppression Therapy - Therapy of choice for symptom relief and healing of erosive esophagitis is an 8-week PPI course. There is similar efficacy among all PPIs. <i>يمكن ممكن تحتفظ الإحساس به من مريض كل</i> High, Strong - For maximal pH control, delayed-release PPIs should be administered 30-60 minutes before meals. Moderate, Strong - PPIs should be started at once daily dosing prior to the first meal each day. <i>Idea</i> <i>ساعة قبل نص</i> Moderate, Strong - Patients with Barrett's esophagus can be treated similarly to those with GERD who do not have Barrett's esophagus. Moderate, Strong - Flexibility with meal time administration may be seen with newer PPIs (eg, dexlansoprazole). Moderate, Conditional - When clinically indicated, PPIs are considered safe in pregnancy. Moderate, Conditional - Adjustments of dose timing and/or twice daily dosing may be beneficial in patients with night-time symptoms, variable schedules, and/or sleep disturbances who are partial responders to PPI therapy. Low, Strong - In patients with typical GERD symptoms who also have extraesophageal symptoms, a PPI trial is recommended. Low, Strong - Optimization of proton pump inhibitor therapy should be assessed in anyone with refractory GERD symptoms. Low, Strong	

مرات فصل
switch
منازل وجيه
لا دمع
وجيه

- | | | |
|----|--|-----------------------|
| 16 | • Increasing to twice daily dosing or switching PPI may be beneficial in partial responders to PPI therapy. | Low, Conditional |
| 11 | • Further evaluation is recommended for nonresponders to PPI therapy. | Low, Conditional |
| 12 | • If adverse effects occur with PPI <u>may consider switching to an alternative PPI.</u> | Low, Conditional |
| 13 | • Patients with osteoporosis can use a PPI. | Moderate, Conditional |
| 14 | • Concern for hip fracture with PPI should be considered in those with osteoporosis AND other risk factors for hip fracture. | Moderate, Conditional |
| 15 | • PPIs are a risk factor for development of <i>Clostridium difficile</i> . | Moderate, Moderate |
| 16 | • PPIs are a risk factor for development of Community-Acquired Pneumonia with short-term use (but not long-term use). | Moderate, Conditional |
| 17 | • PPIs can be used in patients on clopidogrel and there is not an increased risk for adverse cardiovascular events. | High, Strong |

3

Promotility Therapy and Other Nonacid Suppression Therapies

- | | | |
|---|---|-----------------------|
| 1 | • Prokinetic medications and/or baclofen should not be used to manage GERD without diagnostic evaluation. | Moderate, Conditional |
| 2 | • Sulcralfate is not generally recommended in nonpregnant GERD patients. | Moderate, Conditional |

4

Maintenance Therapy

- | | | |
|---|---|-----------------------|
| 1 | • Maintenance therapy is recommended for (1) patients with continued symptoms after PPI discontinuation; (2) patients with complications including erosive esophagitis and Barrett's esophagus. | Moderate, Strong |
| 2 | • The lowest effective dose should be used when long-term PPI therapy is indicated for maintenance. Strategies such as on-demand and intermittent therapy may be beneficial. | Low, Conditional |
| 3 | • H2-receptor antagonists may be used as maintenance therapy in patients without erosive disease when the goal is heartburn relief. | Moderate, Conditional |

5

Surgery

1. Surgery is a long-term treatment option in GERD patients.
2. Surgery is not generally recommended in PPI nonresponders.
3. Surgery is not generally recommended in patients with extraesophageal symptoms not responding to PPI therapy.
4. Endoscopic therapy or transoral incisionless fundoplication not recommended as alternative to medical or traditional surgical procedures.
5. Bariatric surgery (gastric bypass) should be considered in obese patients contemplating surgical therapy.

High, Strong

High, Strong

Moderate, Strong

Moderate, Strong

Moderate, Conditional

a: Level of evidence per Grades of Recommendation, Assessment, Development, and Evaluation

(GRADE) system:

High = further research not likely to change authors' confidence in the estimate of effect;

Moderate = further research would likely have an impact on the confidence in the estimate of effect;

Low = further research would be expected to have an important impact on the confidence in the estimate of the effect and would be likely to change the evidence.

Strength of evidence per GRADE system:

Strong = desired effects of an intervention clearly outweigh the undesirable effects;

Conditional = there is uncertainty about the trade-offs between desirable effects and undesirable effects.

هون رح نفصل الجداول :-

اول اسّي لازم نعرف انه هاي كاها Recommendation
من Guideline وفي تصنيف لقوة كل اقتراح
ياي هو آخر عامود بالجداول .

في عنا 5 category :-

1• Lifestyle Modifications

2• Acid suppression Therapy

3• Proton Pump Inhibitor Therapy and Other Nonacid Suppression Therapies

4• Maintenance Therapy

5• Surgery

قوة الدليل من مستوى الدليل من
(Level of evidence, strength)

① Lifestyle

A. obese or weight gain recently?

weight loss

(Moderate, conditional)

B. Elevation of the head end of the bed and avoidance of food 2-3 hours before bed time

(Low, conditional)

C. Routine elimination of food Not recommended

(Low, conditional)

فوق مثالاً نفس حب البصل ولثوم او ايس

أكله بتزيد الـ GERD عادي ما في داعي

فكيلا يجه عنهم

لكن في بعض الاشياء مثلاً البهارات

يقللهم منها انه يوكل سارك بس انه -خفف

ويكذلك الحار وحمض

② Acid suppression therapy

1. مريض عنده erosive esophagitis ← healing status و relief of symptoms

Drug of choice
↓
PPIs, 8 week (High, Strong)
كل يوم نفس الفعالية

2. مريض خضع لاختبار pH و لم يجد أن PH < 4 في 24 ساعة
سواء؟

قبل كل 30-60 min + delayed release PPI (moderate, strong)

3. لو مريض مرة واحدة PPI باليوم كيف اوضاعه؟

قبل اول وجبة بينة ساعة (يعني قبل الفطور بينة ساعة)
و احياناً عادي ممكن قبل احسن وجبة بينة ساعة (مثل الغدا)
(moderate, strong)

4. لو المريض عنده Barrett's esophagus
يعالجه نزي اي مريض GERD عادي
(Mentkinace therapy) (moderate, strong)

5. Newer P (dexlansoprazole) dual phase release

بالتاكي في مريض

منا سبب تاني؟

لو المريض ياي صوب يلتزم بالجرعة يومياً
الدا قبل الوجبة بينة ساعة
(moderate, conditional)

who can afford it

6. لو pregnancy وفي عنده clinically indicated
PPI erosive esophagitis

لا نه وقتها risk < benefit
(Modirat, conditional)

ازد frequency
adjustments of dose timing and/or twice daily dosing may be beneficial in patients with
night-time symptoms, variable schedules, and/or sleep disturbances who are partial
responders to PPI therapy.

يعني لما المريض اعراضه ليلا ممكن اعدل وقتها اضع ادوية
مثل لما غيرنا من الإفطار، للغداء او ممكن نزيد ال frequency
بدل 40 PPI مرة 20 PPI مرتين

(Low, strong) طبعا مش اكيد راجع يزيها عادي (تجربة وخطأ)

8. in patients with typical GERD symptoms who also have extraesophageal symptoms, a PPI
trial is recommended.

في المرضى الذين يعانون من أعراض ارتجاع المريء النموذجية والذين يعانون أيضًا من أعراض خارج المريء، يوصى
باستخدام مثبطات مضخة البروتون.

(Low, strong)

9. Optimization of proton pump inhibitor therapy should be assessed in anyone with refractory
GERD symptoms.

ينبغي تقييم تحسين علاج مثبطات مضخة البروتون لدى أي شخص يعاني من أعراض الارتجاع المعدي المريئي
المقاومة للعلاج.

ما استجاب للدواء بدى اعراض الدوا، الجرعة، اوراق تعديله على الدواء

(Low, strong)

10. Increasing to twice daily dosing or switching PPI may be beneficial in partial responders to
PPI therapy.

طبعا هو انصح ان افادى ليخصه نس
ممكن انه ممكن ازيد الجرعة او اغير ال PPI للمريض
partial

بعرف انه طولنا وانه الشابر في تفاصيل أكثر من المتوقع لكن تذكروا

"قيمتك قيمة ما أنت مشغول به.
- ابن عطاء الله.
نكمل:

Further evaluation 'ts recommended for nonresponders to PPI therapy. 11

يمكن اعمل further diagnosis قبل الـ 24 pH monitoring او manometry evaluation

فمثلاً ممكن تكون مشكلة من pH أو PPI
تستغل على الـ pH يكن ما قل الـ reflux
ويمكن بيدي اشي يستغل على الـ reflux (low conditional)

If adverse effects occur with PPI may consider switching to an alternative PPI 12

حتى هار Sever headache من الـ omeprazole ممكن لواضحة
Laizoprazol ما يصير نفس الـ sever (low conditional)

13. مريض مع osteoporosis ممكن يستخدم الـ PPI عادي.
كونه في ساحة الـ PPI تقل هشاشة لكن هم
شو يعلوا؟ bone demineralization قلل ايكثافة شوية
oste

حتى انتب؟ لما عند osteo وعند
other risk factor
في مخاوفهم
(moderate, conditional)

Concern for hip fracture with PPI should be considered in those with 14

osteoporosis AND other risk factors for hip fracture

يجب أن يؤخذ القلق بشأن كسر الورك مع مثبطات مضخة البروتون في الاعتبار عند الأشخاص
المصابين بهشاشة العظام وعوامل الخطر الأخرى لكسر الورك

عزم انبه الـ patient education
(moderate, conditional)

كل مريض يوفد Long term PPI حتى لو مع osteo
يفضل الحصة V.D, Ca

PPIs are a risk factor for development of Clostridium difficile,

15.

pseudomembranous colitis

نسب المرض انه في حال بار عنه اسهل شدي وما راع
ضروري يراجع المريض خوفاً لو في blood or mucus

(moderate, moderate)

- PPIs are a risk factor for development of Community-Acquired
Pneumonia with short-term use but not long-term use).

16.

كانه يضر colonization

للبيكتريا بسبب ال pH

اول 30 يوم

(moderate, conditional)

pPis can be used in patients on clopidogrel and there is not an
increased risk for adverse cardiovascular events.

17.

(high, strong)

شواقة بين ال clopidogrel and PPI

antiplatelet

indicated in MI

بتركيبة شبيهة او
مما نمانسك

او يكون بيد ال aspirin

بالتالي يكون وجود ضروري و
حالة

حالة

activation و prodrug

انزيمات

2C19, 3A4

inhibition ال PPI

clopidogrel efficacy

clinically و theoretical

there is not increase risk on cardiovascular.

هناك حالة ال (ساعات قبل) ال PPI

omprazole ال mortality
(recommend pantoprazole)

هانت خلاصنا 1- ppi recommendation

③ Promotility Therapy and Other Nonacid Suppression Therapies

1. Nausea & Vomiting → metoclopramide

بزيادة حركة الـ GI للأشياء قبل فتحها
وكان هو هدف الـ clearance قبل الـ GERD
Symptoms → ان كان سبب الـ GERD هو
decrease GI clearance

2. prokinetic medications and/or baclofen should not be used to manage GERD without diagnostic evaluation. لا ينبغي استخدام الأدوية الحركية و/أو الباكلوفين لعلاج مرض الارتجاع المعدي المريئي دون تقييم الحالة

مرضى عضلات LES pruser
واضع لتو السبب فشان يزيد الـ LES S.E
← يقلل الـ reflux لكن الـ evaluation
لذلك بعد الـ evaluation

3. Sulcralfate is not generally recommended in nonpregnant GERD patients, لا ينصح عمومًا باستخدام سولكرالفات في مرضى الارتجاع المعدي المريئي غير الحوامل.

Maintenance Therapy .

Relapse
Long term maintenance
يعنى

Maintenance therapy is recommended for

(1) patients with continued symptoms after PPI discontinuation:

(2) patients with complications including erosive esophagitis and Barrets esophagus.

The lowest effective dose should be used when long-term PPI therapy is indicated for maintenance.

(H₂RA) عند الحاجة

كيف اعرفها؟ بالتجريب

Strategies such as on-demand and intermittent therapy may be beneficial.

H₂-receptor antagonists may be used as maintenance therapy in patients without erosive disease when the goal is heartburn relief.

(1) المرضى الذين يعانون من أعراض مستمرة بعد التوقف عن استخدام مثبطات مضخة البروتون:

(2) المرضى الذين يعانون من مضاعفات تشمل التهاب المريء التآكلي ومريء باريت.

يجب استخدام أقل جرعة فعالة عندما يكون علاج مثبطات مضخة البروتون طويل الأمد ضروريًا للصيانة.

قد تكون الاستراتيجيات مثل العلاج عند الطلب والعلاج المتقطع مفيدة.

. يمكن استخدام مضادات مستقبلات الهيستامين 2 كعلاج لسوء التغذية في المرضى الذين لا يعانون من مرض التآكل

عندما يكون الهدف هو تخفيف حرقة المعدة.

TABLE 49-3 Therapeutic Approach to GERD in Adults

Recommended Treatment Regimen	Brand Name	Oral Dose	Comments
Intermittent, mild heartburn (Individualized lifestyle modifications + patient-directed therapy with antacids and/or nonprescription H₂RAs or nonprescription PPIs)			
Individualized lifestyle modifications			Lifestyle modifications should be individualized for each patient
Patient-directed therapy with antacids (≥12 years old)			
→ Magnesium hydroxide/aluminum hydroxide with simethicone	Maalox®	10-20 mL as needed or after meals and at bedtime	If symptoms are unrelieved with lifestyle modifications and nonprescription medications after 2 weeks, patient should seek medical attention; do not exceed 16 teaspoonfuls per 24 hours
Antacid/alginic acid	Gaviscon®	2-4 tablets or 10-20 mL after meals and at bedtime	Note: Content of alginic acid varies greatly among products; the higher the alginic acid the better (at least 500 mg)
Calcium carbonate	Tums®	500 mg, 2-4 tablets as needed	
Patient-directed therapy with nonprescription H₂-receptor antagonists (up to twice daily) (≥12 years old)			
Cimetidine	Tagamet HB®	200 mg	If symptoms are unrelieved with lifestyle modifications and nonprescription medications after 2 weeks, patient should seek medical attention
→ Famotidine	Pepcid AC®	10-20 mg	
Nizatidine	Axid AR®	75 mg	If symptoms are unrelieved with lifestyle modifications and nonprescription medications after 2 weeks, patient should seek medical attention
→ Ranitidine	Zantac®	75-150 mg	

Contamination: لا نه البرودكتا كان فيه

كل يستخدم بسبب
Drug-Drug
reaction

قليل يستخدم بسبب
انسحاب من السوق

OTC dose
حسب
20 twice

Patient-directed therapy (>18 years old) with nonprescription proton pump inhibitors (taken once daily)

→ Esomeprazole	Nexium® 24HR	20 mg
→ Lansoprazole	Prevacid® 24HR	15 mg
Omeprazole	Prilosec OTC®	20 mg
Omeprazole/sodium bicarbonate	Zegerid OTC®	20 mg/1,100 mg

If symptoms are unrelieved with lifestyle modifications and nonprescription medications after 2 weeks, patient should seek medical attention

Symptomatic relief of GERD (individualized lifestyle modifications + prescription-strength H2-receptor antagonists *or* prescription-strength proton pump inhibitors)

Individualized lifestyle modifications

Lifestyle modifications should be individualized for each patient

Prescription-strength H2RAs (for 6-12 weeks)

Cimetidine (off-label use)	Tagamet®	400 mg four times daily or 800 mg twice daily
----------------------------	----------	--

- For typical symptoms, treat empirically with prescription-strength acid suppression therapy
- If symptoms recur, consider maintenance therapy. Note: Most patients will require standard doses for maintenance therapy

→ Famotidine

Nizatidine

Pepcid®

- 20 mg twice daily

AxiD®

150 mg twice daily

Ranitidine

Zantac®

150 mg twice daily

Prescription-strength PPIs (for 4-8 weeks)

➔ **Dexlansoprazole**

Dexilant®

30 mg once daily for 4 weeks

- For typical symptoms, treat empirically with prescription-strength acid suppression therapy
- Patients with moderate-to-severe symptoms should receive a PPI as initial therapy
- If symptoms recur, consider maintenance therapy

2/ سركال و الف لوج

Esomeprazole	Nexium®	20-40 mg once daily
Lansoprazole	Prevacid®	15 mg once daily
Omeprazole	Prilosec®	20 mg once daily
Omeprazole/sodium bicarbonate	Zegerid®	20 mg once daily
Pantoprazole (Off-label use)	Protonix®	40 mg once daily
→ Rabeprazole	Aciphex®	20 mg once daily

Healing of erosive esophagitis or treatment of patients with moderate-to-severe symptoms or complications (Individualized lifestyle modifications + high-dose H2-receptor antagonists or proton pump inhibitors or antireflux surgery)

Individualized lifestyle modifications

Lifestyle modifications should be individualized for each patient

PPIs (up to twice daily for up to 8 weeks) → *الأسولون*

Dexlansoprazole	Dexilant®	60 mg daily
Esomeprazole	Nexium®	20-40 mg daily
Lansoprazole	Prevacid®	30 mg once or twice daily
→ Omeprazole	Prilosec®	20 mg once or twice daily
Rabeprazole	Aciphex®	20 mg once or twice daily
→ Pantoprazole	Protonix®	40 mg once or twice daily

- For extraesophageal or alarm symptoms, obtain endoscopy with biopsy to evaluate mucosa
- If symptoms are relieved, consider maintenance therapy. PPIs are the most effective maintenance therapy for patients with extraesophageal symptoms, complications, and erosive disease.
- Start with twice-daily PPI therapy if reflux chest syndrome present
- Patients not responding to pharmacologic therapy, including those with persistent extraesophageal symptoms, should be evaluated via manometry and/or ambulatory reflux monitoring

Set down

High-dose H₂-receptor antagonists (for 8-12 weeks)

Cimetidine	Tagamet®	400 mg four times daily or 800 mg twice daily
Famotidine	Pepcid®	20-40 mg twice daily
→ Nizatidine	Aciphex®	150 mg two to four times daily
Ranitidine	Zantac®	150 mg four times daily

Note: If high-dose H₂RA needed, may consider using proton pump inhibitor to lower cost, increase convenience, and increase tolerability

Note: Four times daily H₂RA is considered off-label use for Nizatidine

Interventional therapy

- Antireflux surgery
- Bariatric surgery
- Endoscopic therapies

الجدول بالسرديات الاخر به السابقه هو ال therapeutic approach of GERD in adult

بيحكى عن (3) حالات شو هي ؟!

1. Intermittent, mild heartburn

ما تسمى كتر

(1)

هون يكون ايسر ما تسمى GERD

(2)

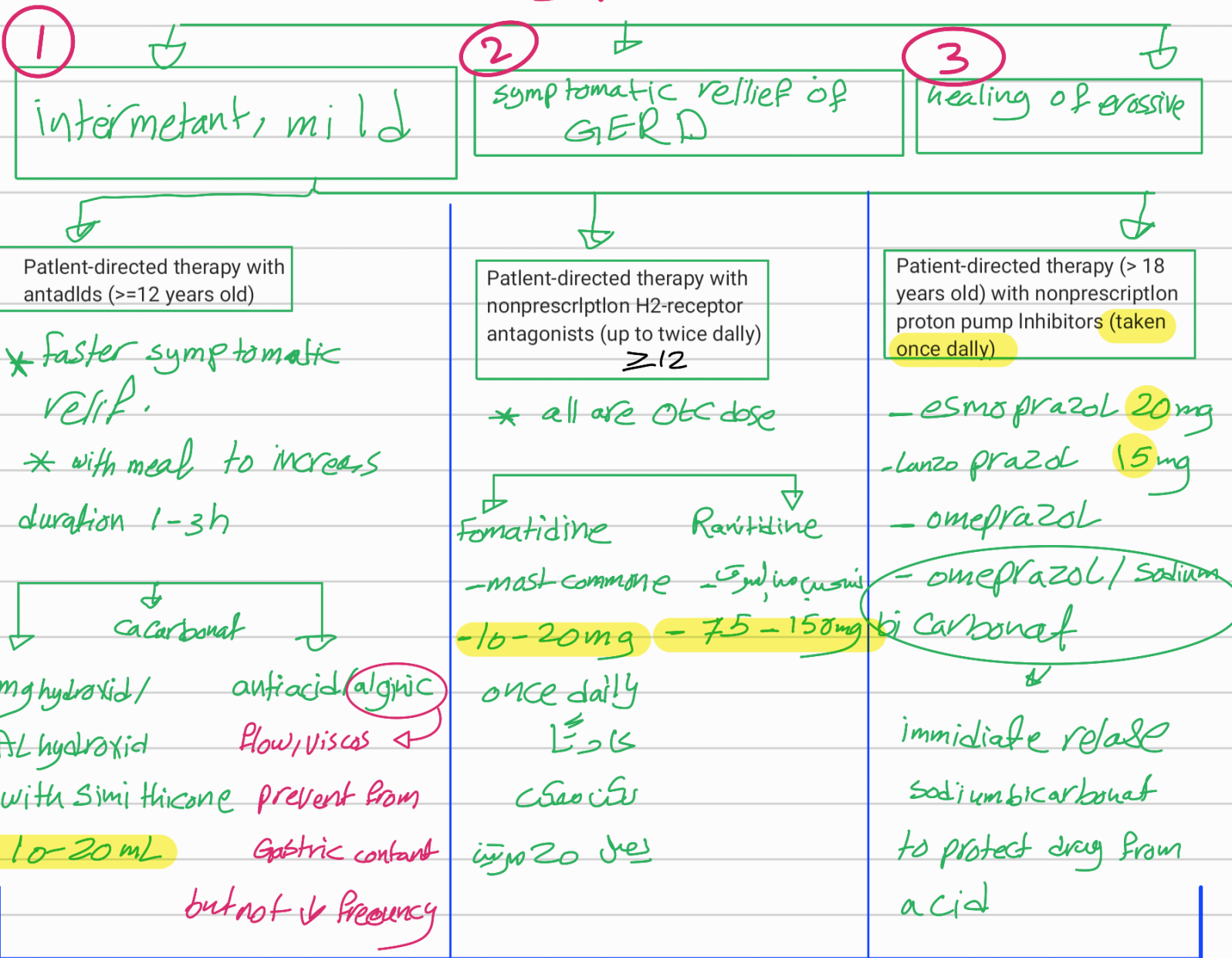
خفيف شو ايسر ؟

(Individualized lifestyle modifications + patient-directed therapy with antacids and/or nonprescription H₂ or nonprescription PPIs)

(1)

(1) تعديل نمط الحياه كازم لكل المريض حتى اصنا والله 😊

Symptoms



If symptoms are unrelieved with lifestyle modifications and nonprescription medications after 2 weeks, patient should seek medical attention

TABLE 49-5 Drug Monitoring^{37,41-43}

Drug	Adverse Drug Reaction	Monitoring Parameter	Comments
Antacids • Magnesium hydroxide/aluminum hydroxide • Antacid/alginic acid • Calcium carbonate	<i>Chronic</i> <i>خمس صا لوا كذا</i> • Diarrhea or constipation (depending on product) • Alterations in mineral metabolism • Acid-base disturbances	• Periodic calcium and phosphate levels in patients on chronic therapy	• Use caution with aluminum- and calcium-containing antacids in patients with renal impairment • Aluminum-containing antacids may bind to phosphate in the gut and lead to bone demineralization
H₂-Receptor Antagonists • Cimetidine • Famotidine • Nizatidine • Ranitidine	• Headache, somnolence, fatigue, dizziness, and either constipation or diarrhea	• Monitor for CNS effects, especially in the elderly • Monitor vitamin B ₁₂ serum concentrations in those on chronic, long-term therapy or in those on higher doses	• May see increased CNS effects (rare) in those over 50 years of age or in those with renal or hepatic dysfunction • May be associated with vitamin B ₁₂ deficiency with longer duration therapy and in higher doses

كله شرحنا ه فوق بالتفصيل

Proton Pump Inhibitors

- Dexamprazole
- Esomeprazole
- Lansoprazole
- Omeprazole
- Omeprazole/
sodium bicarbonate
- Pantoprazole
- Rabeprazole

Most common adverse effects:

- Headache, dizziness,
somnolence, diarrhea,
constipation, flatulence,
abdominal pain, and nausea

Other important adverse effects:

- Enteric infections (*C. difficile* infections)
- Increased risk of pneumonia

Long-term adverse effects:

- Hypomagnesemia
- Bone fractures
- Vitamin B₁₂ deficiency

- Number and type of diarrhea episodes

- Periodic magnesium levels warranted in those on higher doses or who are on therapy for greater than 1 year

- Routine bone density studies or calcium supplementation should only be considered if other risk factors for osteoporosis or bone fractures are present

- Respiratory symptoms within first 30 days of therapy

- Periodic vitamin B₁₂ serum concentration with long-term use

- Acid suppression may result in loss of host defense against ingested spores and bacteria permitting a higher burden of exposure
- Hypomagnesemia is uncommon but can be life-threatening; has been seen as soon as 3 months after starting therapy but more likely in those on PPIs greater than 1 year
- May increase risk for osteoporosis-related fractures of the hip, wrist or spine; Most common with high-dose (eg, multiple daily doses) and long-term use (eg, ≥ 1 year) Patients with known osteoporosis can remain on proton pump inhibitor
- PPIs may inhibit secretion of intrinsic factor, which potentially can lead to vitamin B₁₂ deficiency; this is not common and usually associated with use for >3 years
- May increase risk of community-acquired pneumonia, particularly within the first 30 days of therapy

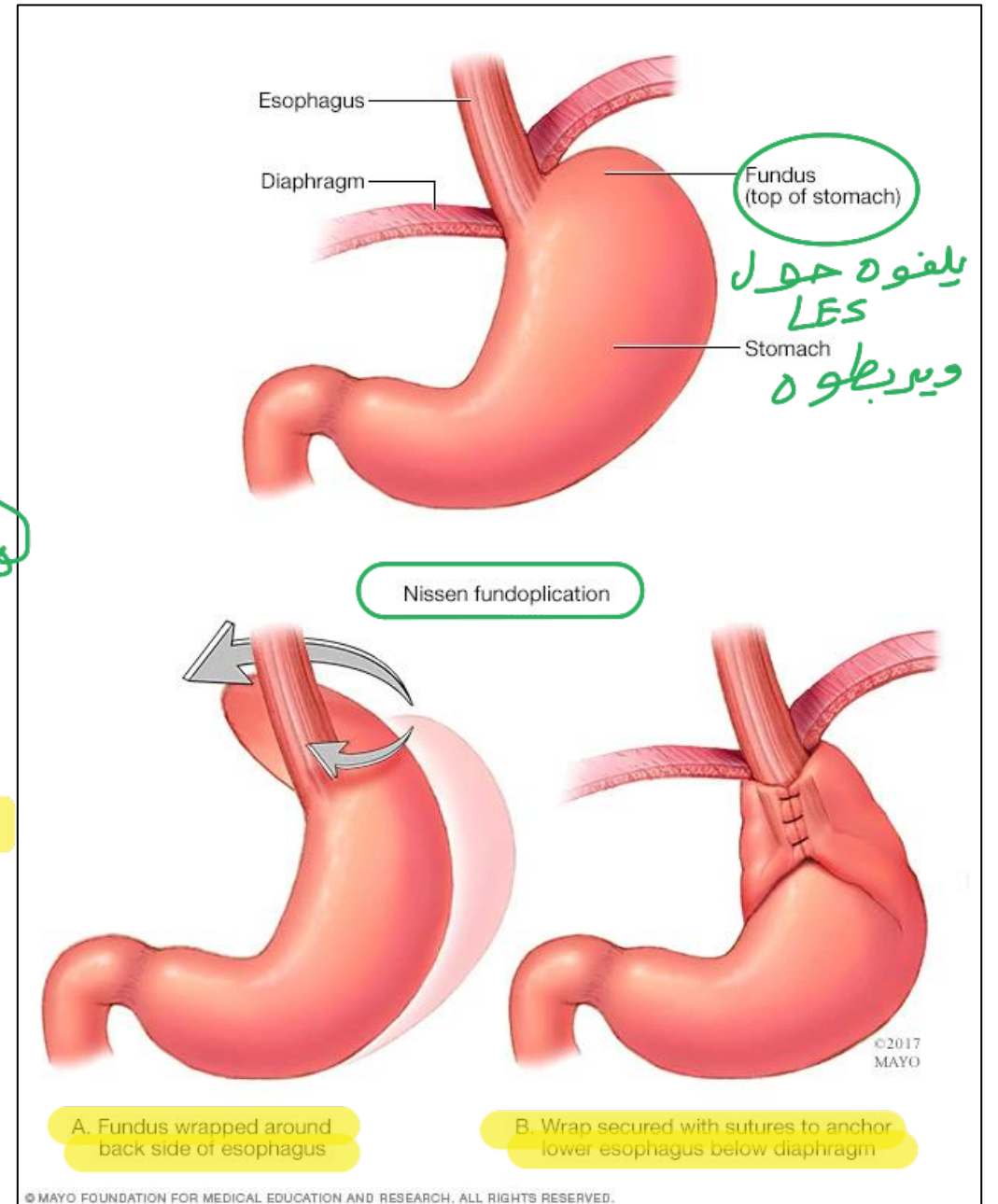
شرحنا
كله

✓ Surgical Management

- Indications for surgical fundoplication include:
 - the need for continuous PPIs
 - noncompliance, or intolerance to medical therapy in patients who are good surgical candidates
 - ongoing nonacid reflux despite adequate medical therapy
 - patient preference for surgery

• When symptoms are controlled on PPI therapy, medical therapy and fundoplication are equally effective.

• Although fundoplication could provide better symptom control and quality of life in the short term, new postoperative symptoms and surgical failure can also occur.



Complications

- ✓ Esophageal erosion and ulceration (esophagitis) can rarely lead to overt bleeding and IDA. يمكن يسبب
- ✓ Strictures can form when esophagitis heals, leading to dysphagia. Endoscopic dilation and maintenance PPI therapy typically resolve dysphagia from strictures. تضيقات
- ✓ Barrett esophagus (BE) is a reflux-triggered change from normal squamous esophageal epithelium to specialized intestinal metaplasia and carries a 0.5% per year risk of progression to esophageal adenocarcinoma. Endoscopic screening for BE should be considered for patients with GERD who are at high risk (long duration of GERD symptoms, ≥ 50 years of age, male gender, Caucasian). نسب



بالعندما /
لأنه الجسم به يمكن
بالتالي يغير الخلايا
فمنه ن نحصل الالتهاب
لكن هذا من (مست) حاد
وبالعقل خلايا مختلفة
عندما يجد الجهاز الهضمي

❖ إذا وصلنا ليهون واستفدوا ادعوا لـ (زهور حمد)
بالرحمة والمغفرة ونور القبر .

تبارك لكم ووصولكم ليهون
يحطيكوا رعايته وتذكروا! إن الله & يضيء
اجر من أحسن عملاً

Done

TABARK AL-Hawamdeh.