

Gastroenterology in General Practice

GERD, Functional Dyspepsia, IBS and
Colon Cancer Screening

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General approach to MCQs regarding management of GI problems

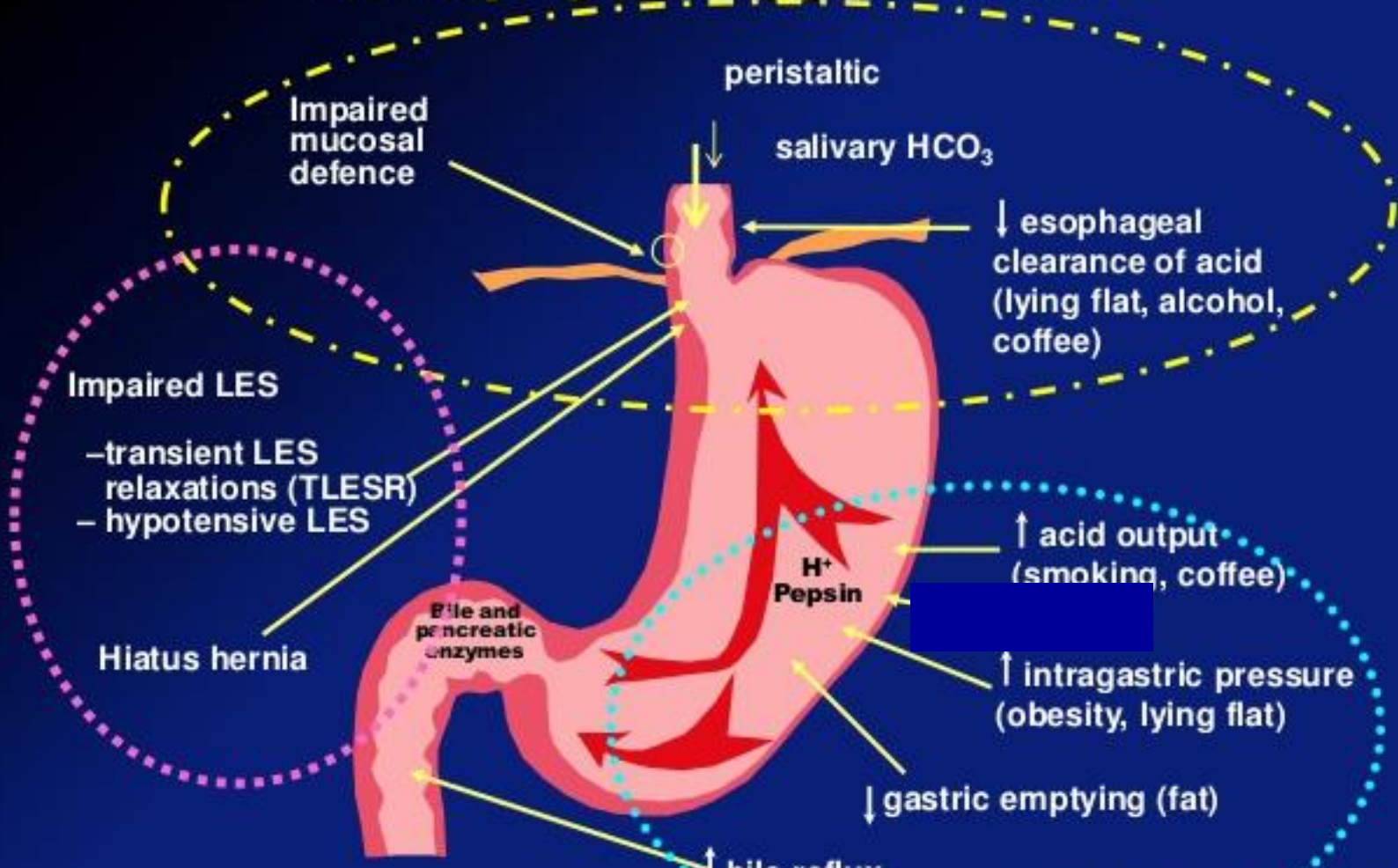
- You are expected to be safe and cost effective in your approach
- Alarm symptoms that warrant referral or more detailed investigations:
 - Dysphagia or odynophagia
 - > 5% weight loss over 6 months
 - hematemesis or melena
 - change in bowel habits within the last 3 months
 - Anemia
 - Abdominal mass or lymphadenopathy on physical examination
 - Abdominal pain and **FEVER** is also usually worrisome unless there are clear symptoms of gastroenteritis
- Think twice before choosing expensive investigations such as CT, MRI, PET scan and tumor markers

Gastroesophageal Reflux Disease

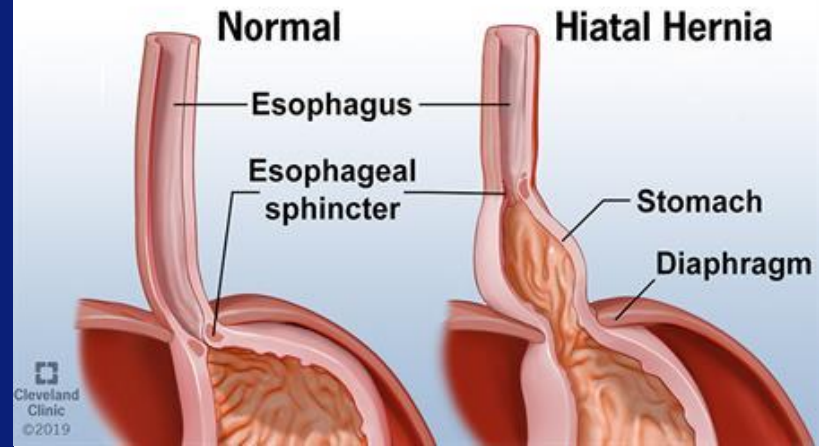
Question 1

- 35 year old man presents with postprandial heartburn and acidity of 6 months duration. There is no dysphagia, hematemesis or weight loss. He had partial improvement with antacids. Physical exam is normal. The next step in her management is:
- A. A trial of PPI for 2 months plus life style modification
 - B. Endoscopy
 - C. Ba swallow
 - D. 24 hour pH measurement

Pathophysiology of GERD



de Caestecker, *BMJ* 2001; 323:736-9.
 Johanson, *Am J Med* 2000; 108(Suppl 4A): S99-103.



- Transient LES relaxation is the most important mechanism for GERD
- Not all hiatus hernia patients have GERD symptoms
- Can have GERD without hiatus hernia
- H pylori DOES NOT cause GERD

GERD: Diagnosis and Differential Dx

- A condition that results from reflux of stomach contents reflux into the esophagus
- Typical symptoms are heartburn and acidity and regurgitation
- Other GERD Symptoms:
 - Globus sensation Nausea Dyspepsia Hypersalivation Hiccups
 - Cough Hoarseness asthma dental erosions recurrent sinusitis
 - Recurrent otitis media
- Differential diagnosis:
 - Functional Heartburn (no pathological reflux)
 - Reflux sensitivity (esophagus sensitive to normal amount of acid or alkaline reflux)
 - Eosinophilic esophagitis
 - **Cardiac pain**

Diagnosis of GERD

Test	Indication	Recommendation
Response to PPI	Classical heartburn ± regurgitation	78% sensitivity Surgery not usually effective if no response to PPI
Barium swallow	Not indicated to diagnose GERD; use in case of dysphagia	Use to rule out rings, strictures
Endoscopy	Patient not responsive to PPI, dysphagia, anemia, chest pain, weight loss	Normal endoscopy does not rule out GERD, Hiatus hernia does not rule in GERD
Manometry	If surgery is contemplated	Not indicated to diagnose GERD, Rule out scleroderma esophagus
24 hr pH measurement	If surgery is contemplated, nonerosive GERD not responsive to PPI	Correlate symptoms with pH readings; avoid surgery if no correlation

Question 2

A 60 year old man with long history of T2DM, hypertension and dyslipidemia presents with a 2 week history of heartburn and epigastric pain which lasts 3-5 minutes. There is no consistent relation to meals. Occasionally he experiences the symptoms after heavy meals and at times after walking.

. The next step in the management is :

- A. Endoscopy to rule out peptic ulcer disease and GERD
- B. A therapeutic trial of PPI for one month
- C. Ultrasound abdomen to rule out gallstones
- D. Cardiac evaluation to rule out ischemic heart disease

Practice Pearls and Perils (1)

- Excluding cardiac cause of chest symptoms should have priority over GERD in patients at high risk for coronary artery disease (elderly, metabolic syndrome, etc)
- If the patient does not respond to PPI, exercise caution in recommending surgery
- Presence of a sliding hiatus hernia does not necessarily indicate presence of GERD
- Normal endoscopy does not rule out GERD (non erosive GERD or NERD)
- Barium meal is not useful in diagnosing GERD
- Patient may not respond to PPI if they have REFLUX SENSITIVITY ie esophageal mucosa is sensitive to normal amount of acid

Initial Treatment: Dietary Restrictions

Fatty Foods

Fried food
High fat meats
High fat dairy

Citrus Fruits

Oranges,
Lemon
Grapefruits
Pineapple

Beverages

Alcohol
Soft Drink
Tea, coffee
Other caffeinated
drinks

Vegetables

Tomato, Onion
Garlic
Mint
Chili

Initial Treatment: PPI vs H2 Antagonists

	PPI	H2 antagonist
Duration of acid suppression	15-21 hours	8 hours
Symptom relief	≈70%	≈50%
Endoscopic remission	80%	40%
Cost	++	+



Question 3

- A 63 year old lady presents to the clinic because of concerns over PPI. She has a long history of heartburn which failed to respond to dietary modification and antacids. She is asymptomatic on Omeprazole 20 mg OD. However, she was recently diagnosed with osteopenia and is worried about taking PPI. Her primary care doctor switched her to nizatidine 300 mg bd but symptoms were not controlled. You recommend:
- A. Endoscopy
 - B. Fundoplication
 - C. Antacids only without PPI
 - D. Resume PPI but reduce the dose of Omeprazole to 20 mg every other day plus measures to treat osteopenia

PPI Safety

Adverse Effects	Number Needed to Harm
Chronic Kidney Disease	333-1000
Dementia	67-1429
Fracture	200-1000
C Difficile	1,111-no association
Micronutrient deficiency	250-333
Myocardial Infarction	No association
Pneumonia	No association
GI malignancy	No association

Vaezi MF, et al .Gastroenterology 2017; 153(1):35–48.

Safety of Proton Pump Inhibitors Based on a Large, Multi-Year, Randomized Trial of Patients Receiving Rivaroxaban or Aspirin



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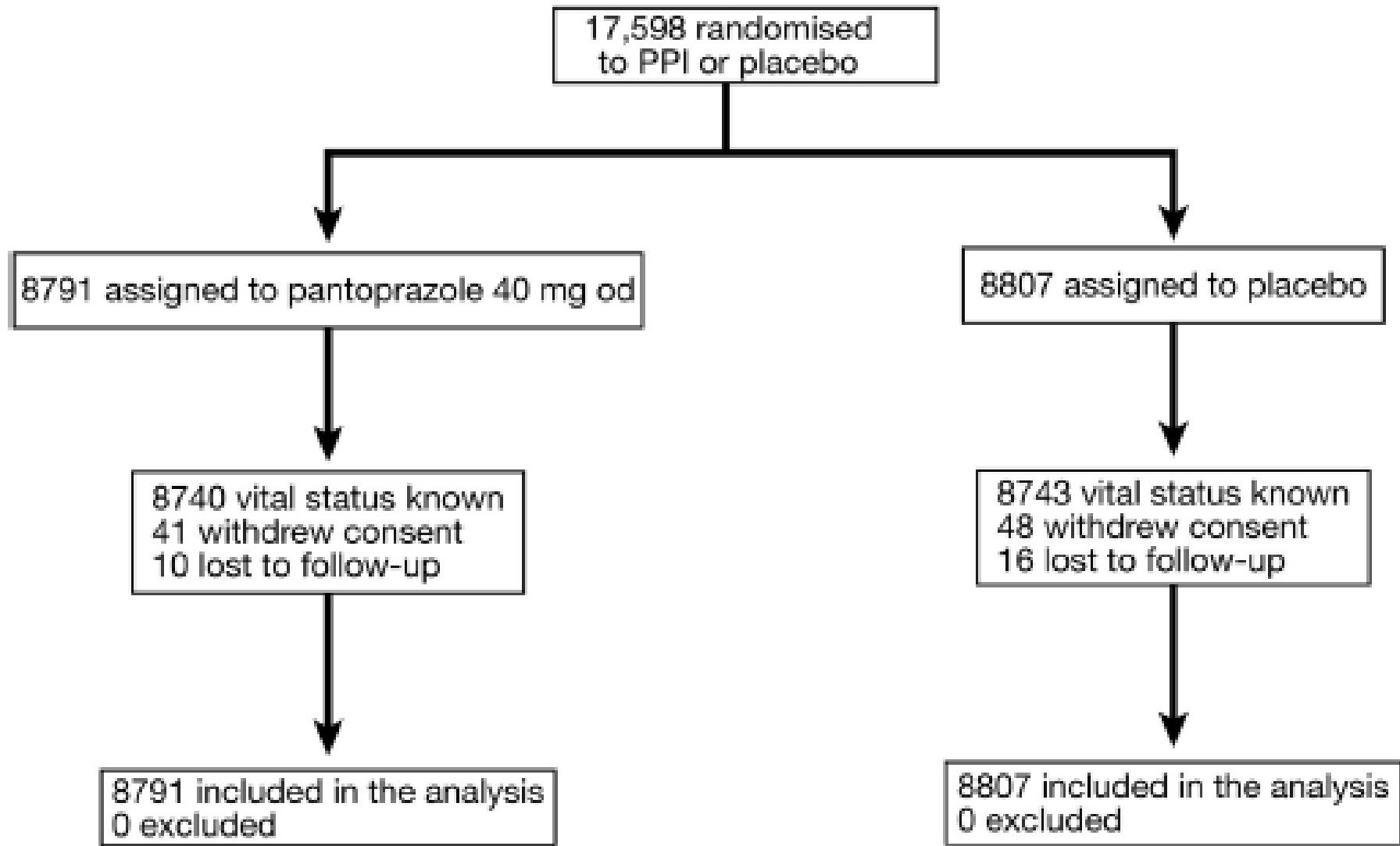
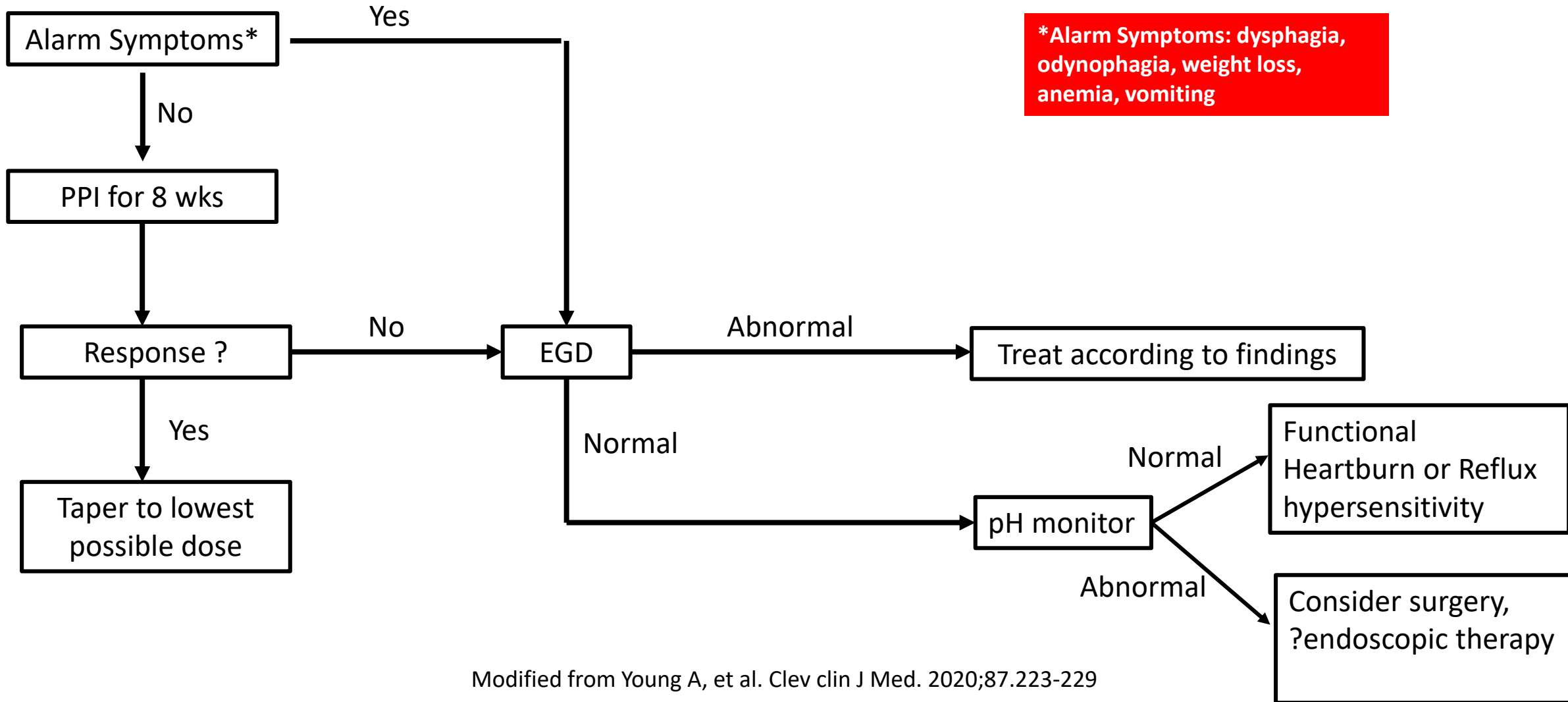


Table 4. Other Prespecified Safety Outcomes Excluding Those That Permanently Discontinued Pantoprazole or Placebo

Outcomes	Incident events, n (%)		Pantoprazole, 40 mg od, vs placebo	
	Pantoprazole, 40 mg od (n = 6947)	Placebo (n = 6868)	OR (95% CI)	P value
Gastric atrophy	10 (0.1)	24 (0.2)	0.71 (0.31–1.59)	.40
<i>Clostridium difficile</i>	5 (<0.1)	2 (<0.1)	2.48 (0.48–12.8)	.28
Other enteric infection	60 (0.9)	42 (0.6)	1.42 (0.95–2.10)	.08
Chronic kidney disease	104 (1.5)	98 (1.4)	1.05 (0.80–1.39)	.73
Dementia	24 (0.3)	22 (0.3)	1.08 (0.60–1.93)	.80
Pneumonia	203 (2.9)	185 (2.7)	1.09 (0.89–1.33)	.41
Fracture	136 (2.0)	150 (2.2)	0.89 (0.71–1.13)	.35
COPD	94 (1.4)	83 (1.2)	1.12 (0.83–1.51)	.45
Diabetes mellitus	393 (5.7)	423 (6.2)	0.91 (0.79–1.05)	.21

COPD, chronic obstructive pulmonary disease; od, once daily.

Management of GERD



Modified from Young A, et al. Clev clin J Med. 2020;87.223-229

Practice Pearls and Perils (2)

- PPIs are superior to H2 antagonists in relieving symptoms and healing mucosal injury
- Safety concerns are based on studies that explored associations rather than causal relationship

In patients who have typical symptoms, treat with PPI for 8 weeks then reduce the dose gradually to the minimum required to control the symptoms

- Consider pH monitoring in non-responders
- pH monitoring if normal is useful in ruling out reflux
- An abnormal pH monitoring study has limited accuracy in establishing GERD as a cause of extraesophageal symptoms

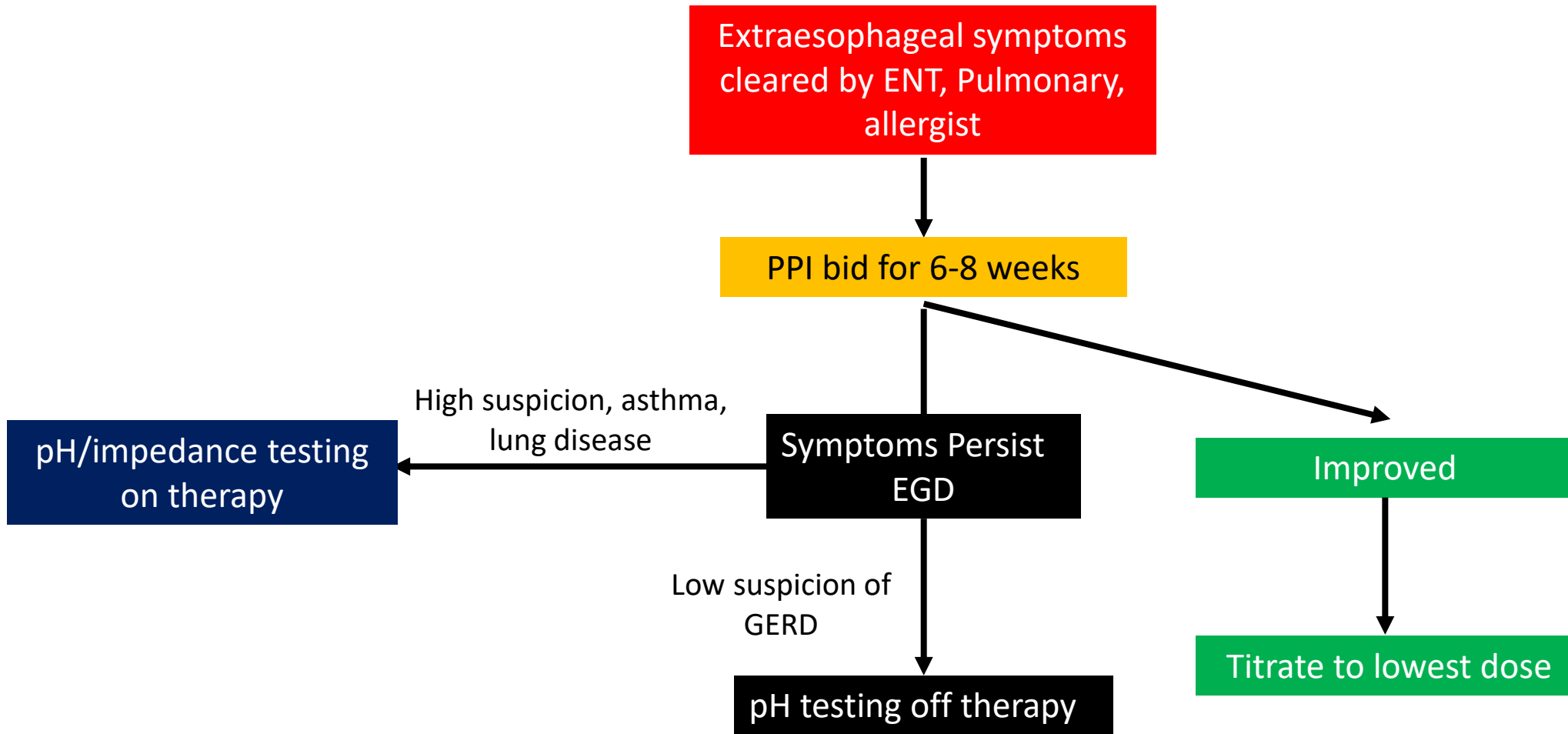
Extraesophageal Symptoms: Question 3

- A 52 year old lady presents with persistent cough and the need to clear her throat repeatedly for the last 4 months. There is no heartburn, but occasionally she feels “pressure or lump” in the throat. She was seen by ENT and pulmonary specialists who treated her with a variety of inhalers, and nasal sprays as well as twice daily PPI without improvement. Past history is remarkable for childhood asthma which resolved at the age of 16. She was treated for anxiety 4 years ago and currently “does not feel anxious”. Both ENT and pulmonary told her “your problems is GERD related” . Which of the following statements is **FALSE**?
 - A. This condition is most probably multifactorial
 - B. Lack of response to high dose PPI for 6-8 weeks makes GERD less likely
 - C. 24 hour pH monitoring esophageal manometry should be considered only if surgery is contemplated
 - D. Surgical fundoplication is indicated in this patient

Extraesophageal Symptoms

Laryngopharyngeal	Respiratory	Other
Chronic throat clearing	Cough	Enamel erosion
Globus sensation	Pulmonary fibrosis	Otitis
Throat pain	Lung transplant rejection	Sinusitis
Hoarseness	Asthma	Postnasal drip
Dysphonia		

Approach to Extraesophageal Symptoms



Functional Dyspepsia

Case 4

A 22 year old woman presented with 1 year history of postprandial fullness and bloating. Occasionally she feels burning in the epigastrium. Although fatty and spicy food precipitates symptoms, occasionally bland food is poorly tolerated. There is no weight loss, vomiting, hematemesis, or dysphagia. Physical exam was normal. The next step in the management of this patient is:

- A. Esophagogastroduodenoscopy
- B. Dietary counselling and a 4 week trial of PPI
- C. Urea breath test to rule out H pylori
- D. Abdominal ultrasound
- E. A 4 week trial of domperidone

Case 4 continued

Urea Breath test was negative. She was given twice daily proton pump inhibitor for 4 weeks. On follow-up she is still unwell. Physical exam is normal and her weight is unchanged. The next step in her management is:

- A. Esophagogastroduodenoscopy
- B. Gastric emptying nuclear scan
- C. Abdominal ultrasound
- D. A trial of a prokinetic agent such as itopride

Case 5

64 year old man presents with a 2 month history of postprandial epigastric pain and 5 kg weight loss. He has history of DM and dyslipidemia discovered 6 years back. Meds: Glucophage, sitagliptin.

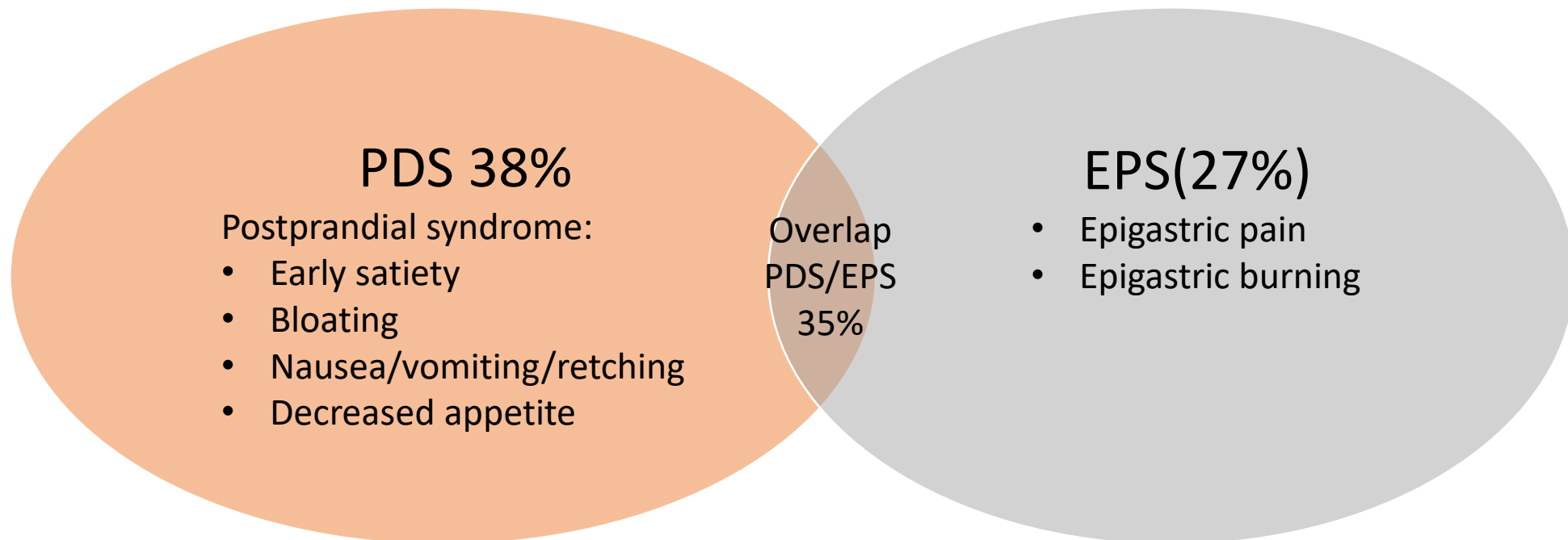
Physical examination is normal. Lab investigations including CBC, liver and renal profiles are normal except for a slightly raised serum alkaline phosphatase and GGT. Esophagogastroduodenoscopy showed mild antral gastritis and rapid urease test for H pylori is positive. Which of the following is true?

- A. Eradicating H pylori is associated with a 90% chance of relief of symptoms
- B. Prokinetic drugs can reduce symptoms in 80% of patients
- C. Alternative causes for this patient's symptoms should be sought
- D. Probiotics are likely to induce significant symptomatic improvement

Diagnostic Criteria and Subtypes (Rome IV)

Rome IV Criteria for Functional Dyspepsia

- Presence of ≥ 1 symptom of postprandial fullness, early satiety, epigastric pain, epigastric burning
- No evidence of structural disease that explains the symptoms



Epidemiology

- General Population: 20-40%
- 3-5% of primary care visits
- 70% of all uninvestigated dyspepsia
- Risk factors:
 - Female sex
 - Increasing age
 - H pylori infection
 - NSAIDS

Functional Dyspepsia: Pathophysiology

- Recognized by morphologic and physiological abnormalities that often occur in combination with:
 - motility disturbance
 - visceral hypersensitivity
 - altered mucosal and immune function
 - H pylori infection
 - altered central nervous system processing

F.D.: Disorder of Gut-Brain interaction

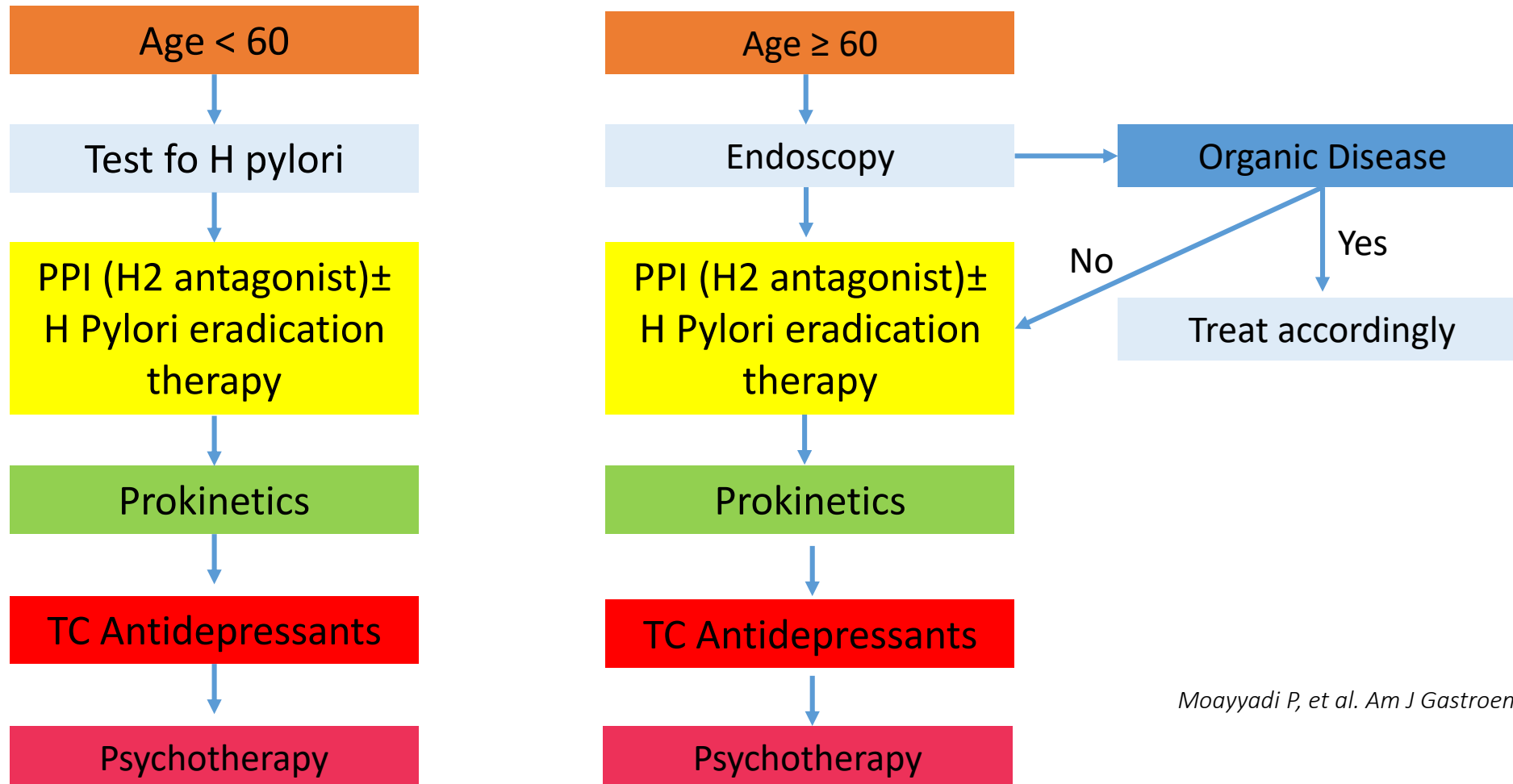
Functional Dyspepsia: General Concepts

- Benign condition
- Incurable but manageable
- Lifestyle modification is an important aspect of management
- Long term treatment is frequently required
- Safety and cost of treatment are paramount
- 50% have anxiety and/or depression
- Main differential diagnoses are Peptic ulcer disease, gallstones, pancreatic disease and gastric cancer

Alarm Features

- Unintentional weight loss of > 5%
- New or progressive dysphagia
- Odynophagia
- Persistent vomiting
- Unexplained iron deficiency anemia
- Palpable mass or lymphadenopathy
- Family history of GI malignancy

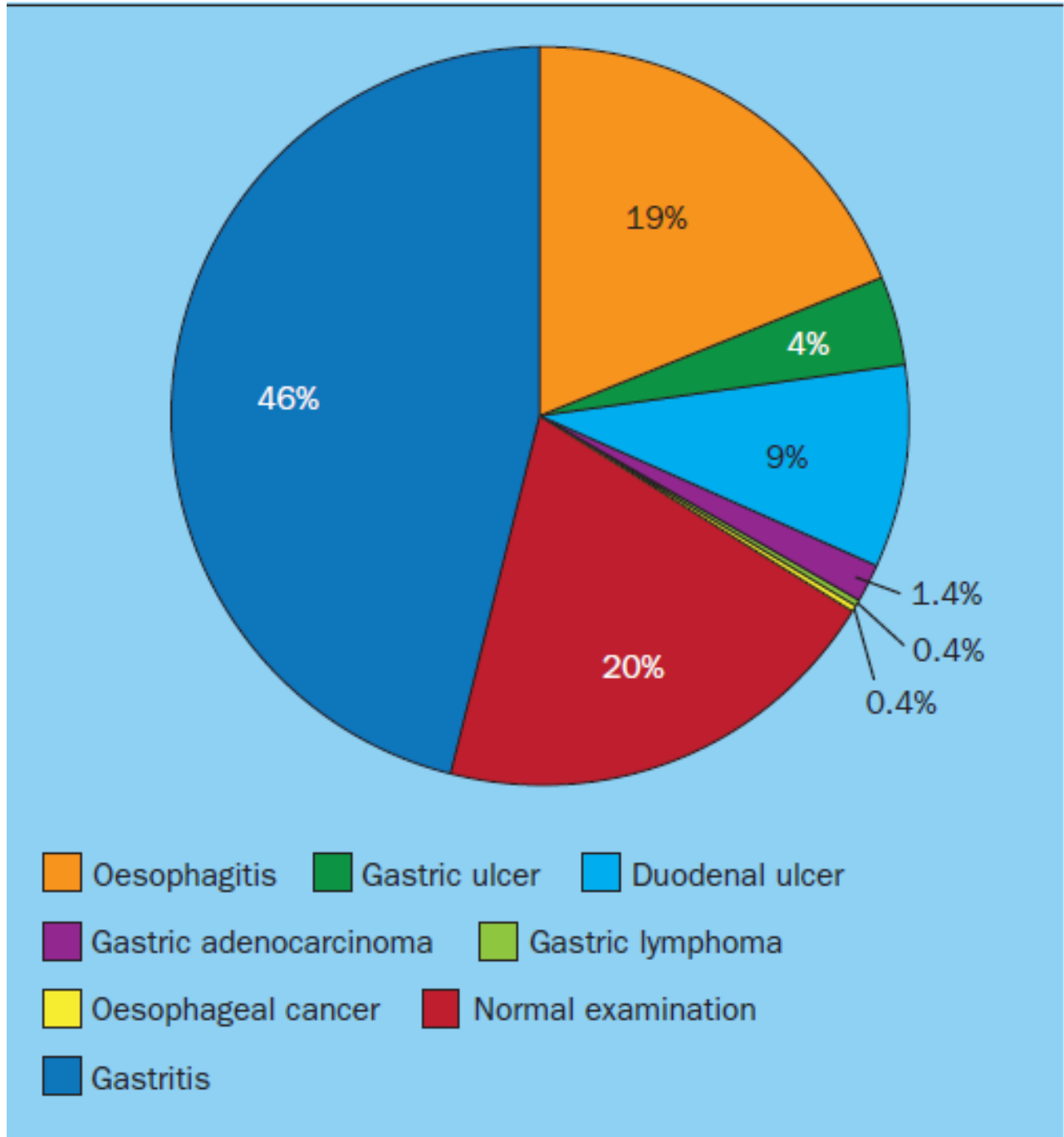
ACG Guidelines for Managing Functional Dyspepsia (modified)



What is the best test to diagnose H pylori?

Test	Accuracy	Cost
Urea breath test	95%	C13 test: \$\$ C14 test: \$
Stool H pylori antigen	92%	\$
Gastric biopsy Rapid Ureas Test Histopathology Culture	80% 90% H pylori difficult to culture	\$\$\$\$\$ \$\$\$\$\$\$
Serology (Antibody test)	Useless	\$

Endoscopic Findings in Uninvestigated dyspepsia

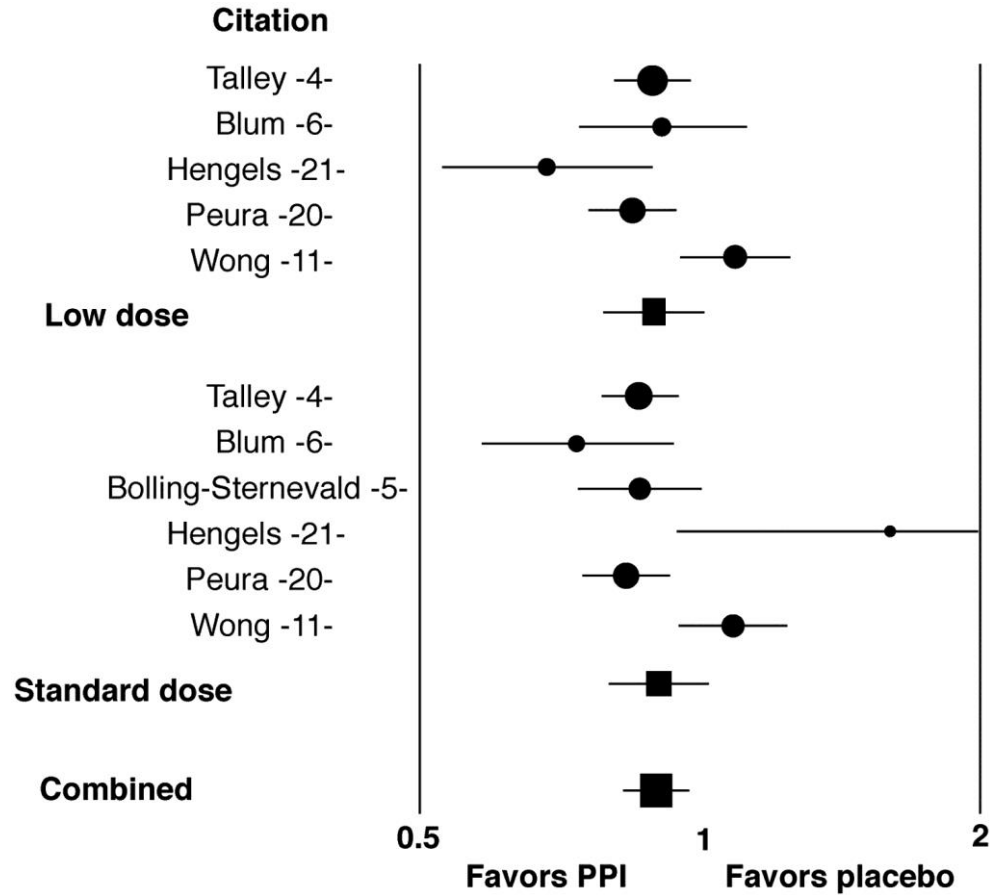


Practice Point:
Chronic Gastritis is usually asymptomatic and is included in the definition of Functional Dyspepsia

Medications for Functional Dyspepsia

Medication	Efficacy	Safety/side effects	Cost
Proton Pump Inhibitors	+ (NNT 11)	Long-term safety concerns	\$\$\$
H pylori Eradication	+/- Long-term efficacy NNT 10-15	Multiple side effects	\$\$
TC antidepressants	+++	+++	\$
Pro-Kinetics			
Domeperidone	+/-	Cardiac arrhythmias, interaction with many medications	\$
Metoclopramide	+/-	Extrapyramidal side effects	\$
Itopride	+	Safe	\$
Sulpride	+	Hyperprolactinemia	\$

PPI vs Placebo in the Treatment of Functional Dyspepsia



PPI Safety Concerns

- Increased fracture risk
- C difficile infection
- Pneumonia
- Increased incidence of gastroenteritis
- Interstitial nephritis

Efficacy of PPI vs H2 antagonists for Functional Dyspepsia

- 25 randomized controlled trials involving 8453 patients
- Compared standard dose PPI with placebo and H2 antagonists for 8 weeks in relieving epigastric pain/discomfort
- PPI was slightly superior to placebo; 31% vs 26%, NNT 11
- No difference in outcome between PPI and H2 antagonist*

Practice Points:

- Acid suppression works best in patients with GERD like symptoms
- Consider H2 antagonist over PPI as the acid suppressant of first choice in FD

*Pinto-Sanchez MI et al. Cochrane Database Sys Rev 2017;(11):CDO11194

Functional Dyspepsia: Conclusions

- Functional dyspepsia accounts for 70% of cases of upper abdominal symptoms
- Extensive investigations is frequently unnecessary, except if there are alarm symptoms
- Management requires a multifaceted approach focused on reassurance, dietary and life style counselling, and the use of safe, cost effective medications
- H pylori eradication, H2 antagonists, PPI, Prokinetics, and anti-depressants constitute the backbone of pharmacological therapy

Irritable Bowel Syndrome

- Recurrent lower abdominal pain
- Altered bowel habits
- Bloating/distension

Diarrhea
Predominant

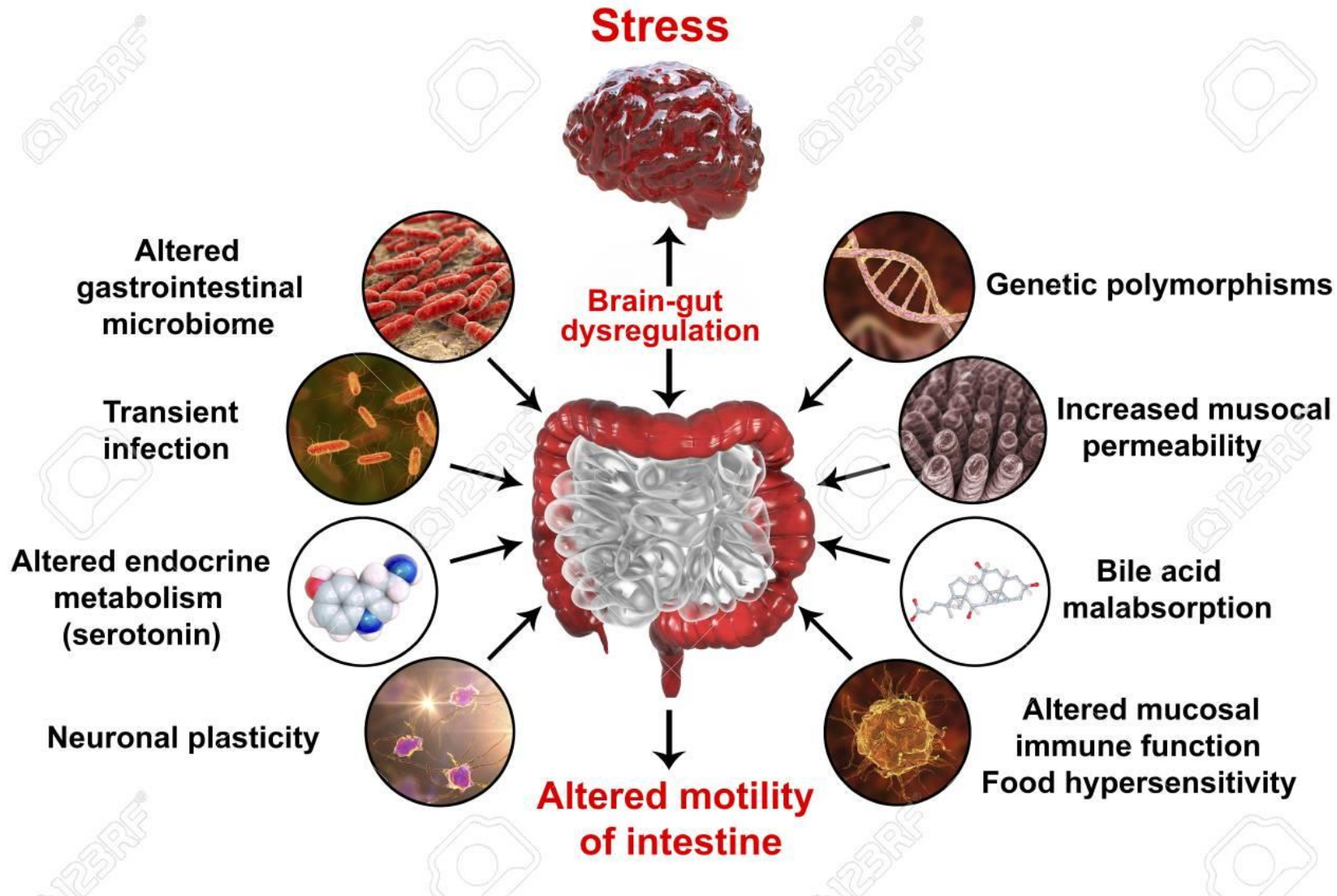
Constipation
Predominant

Mixed
IBS-M

Unclassified
IBS

- 10-15% of population
- F>M
- Diagnosis is based on clinical evaluation and basic investigations (positive diagnosis, not exclusion)
- More aggressive investigation if symptoms start after 50
- IBS-D requires more elaborate investigations than IBS-C

Irritable Bowel Syndrome: Pathophysiology



IBS: Differential Diagnosis

Colorectal Cancer

Inflammatory Bowel Disease

Basic Investigations

- CBC
- CRP or ESR
- Serologic tests for celiac disease
- Fecal calprotectin

} IBS-D

Not necessary in Typical IBS

- Colonoscopy*
- Ultrasound
- Stool analysis
- Thyroid function

* screening colonoscopy recommended for those ≥ 45 yrs old

Management of IBS

Reassurance

Diet and Exercise











Medications

Pre/Probiotics

Psychotherapy

Low FODMAP Diet

F: Fermentable
O: Oligo-sacharides
D: Diosacharides
M: Mono-sacharides
A: and
P: Polyols

FOOD	EAT	AVOID
Vegetables	 lettuce, carrot, cucumber & more	 garlic, beans, onion & more
Fruits	 strawberries, pineapple, grapes & more	 blackberries, watermelon, peaches & more
Proteins	 chicken, eggs, tofu & more	 sausages, battered fish, breaded meats & more
Fats	 oils, butter, peanuts & more	 almonds, avocado, pistachios & more
Starches, cereals & grains	 potatoes, tortilla chips, popcorn & more	 beans, gluten-based bread, muffins & more

- Soluble fiber worsens bloating
- Insoluble fiber: mixed results

Low FODMAP diet: The evidence

Author	Journal	Clear eligibility criteria	RCTS eligible	Meta-analysis performed	Conclusion
Moayyedi 2015	Clin Transl Gastroenterol	Yes	1	Not possible	Uncertain benefit
Rao 2015	Al Phar Ther	Yes	4	Not possible	Uncertain benefit
Marsh 2015	Eur J Nutr	No	6	Conducted	Effective
Krogsgaard 2017	Al Phar Ther	Yes	9	Not conducted	Uncertain benefit

- ✓ The recommendation of the low FODMAP diet as a first-line treatment for patients with IBS is based on trials with high risk of bias, primarily due to lack of proper blinding and choice of control group.
- ✓ All trials in tertiary care; there is a need of studies in other clinical settings
- ✓ No RCT intervention more than 6 weeks , and the effect of the reintroduction period are lacking.

More DBPC RCTs are needed

Pharmacotherapy of IBS

Medication	Efficacy	Safety/side effects	Cost
Anti-spasmodics	First line therapy Variable Efficacy	variable	\$
Peppermint oil	First line therapy Superior to placebo	Heartburn	\$
Laxatives	Short term treatment of IBS-C	Cramps Diarrhea	\$
Antidiarrheal	Short term treatment of diarrhea		\$
Rifaximin	Used for IBS-D, efficacy not well established	Safety beyond 16 weeks not well established	\$\$\$

Pharmacotherapy of IBS

Medication	Efficacy	Safety/side effects	Cost
Tricyclic antidepressants	Second line therapy, effective	Many side effects	\$
SSRI	Conflicting data Use only if there is psychiatric disorder	Several side effects	\$\$
Activated Charcoal	Not Effective	Safe	\$
Probiotics	Bifidobacterium lactis and infantis Variable efficacy	Safe	\$\$

Colon Cancer Screening

- All average risk individuals 45-75 years old should be considered for colonoscopy unless they have severe comorbid conditions that compromise their 5 year survival. Repeat every 10 years
- Colonoscopy at a younger age should be considered if there is a first degree relative have had cancer below age 55, or have IBD
- Alternatives to colonoscopy, include:
 - CT colonography every 5 years
 - Annual stool tests for occult blood (Guaiac, Fecal Immunochemical test) or stool DNA test every 3 years
 - Sigmoidoscopy plus Fecal Immunochemical test every five years

Thank You