



لجان الدفوعات

# PATHOPHYSIOLOGY

MORPHINE ACADEMY

MORPHINE  
ACADEMY



# Pathophysiology-GASTROINTESTINAL DISEASES

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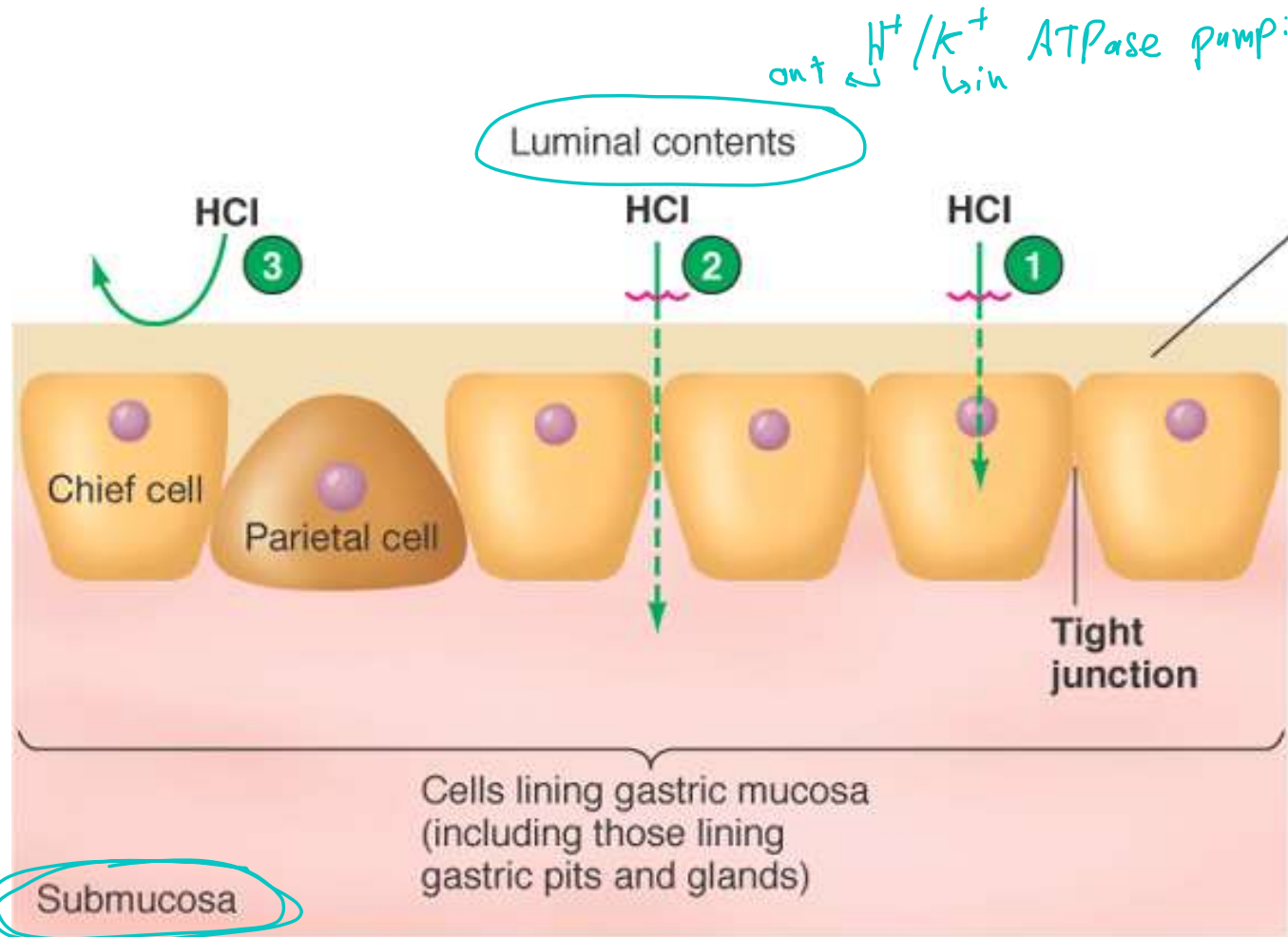
GI مريض بيجارو mucus

# The gastric mucosal barrier

(parietal cells) impermeable

→ Other cells & tight junctions

protective mechanisms



The gastric mucosal barrier made up of the following components enables the stomach to contain acid with injuring itself:

- 1 The luminal membranes of the gastric mucosal cells are impermeable to  $H^+$  so that HCl cannot penetrate into the cells.
- 2 The cells are joined by tight junctions that prevent HCl from penetrating between them.
- 3 A mucus coating over the gastric mucosa offers further protection.

→ } = Passage prevented

protective mechanisms

## □ GASTRITIS

Acute (in mucosa)

chronic

Gastritis is an inflammation of the stomach that may occur in many forms.

### ➤ Acute Gastritis

The gastric mucosa is inflamed and appears red and edematous. It may be ulcerated and bleeding if the mucosal barrier is severely damaged or the circulation is poor, which reduces tissue resistance.

### Acute gastritis may result from:

- Infection by many types of microorganisms (e.g., bacteria and viruses).
- Allergies to foods such as shellfish or drugs.
- Ingestion of spicy or irritating foods, such as hot peppers.
- Excessive alcohol intake.
- Ingestion of aspirin or other NSAIDs (especially on an empty stomach).
- Ingestion of corrosive or toxic substances.
- Radiation or chemotherapy.

# Acute gastritis

إذا لتهه الالتهاب inflammations

عكس يصح perforation وتقع ويصحب Bleeding  
وبها تكون بطول دم.

## Signs and symptoms

- Anorexia, nausea, vomiting → emesis → إغث + استفراغ
- Hematemesis indicates ulceration and bleeding in the stomach. (ulcer استفراغ دم لا مدح)
- Epigastric pain, cramps, or general discomfort.
- Fever and headache usually accompany infection.
- In some cases, particularly with infections, diarrhea may develop.

ألم في راس المعدة إذا كان عند هم  
vomiting و diarrhea بشكل كبير الح  
تفرسوا قتلهم ويصحب Dehydration ويصحب  
imbalance

In persons with severe or prolonged vomiting, there is a danger of dehydration, electrolyte loss, and metabolic acidosis, all of which require supportive treatment.

Certain infections may require treatment with antimicrobial drugs.

medication:  
Anti-biotics.

السبب هو عدوى البكتيريا

بہیں عنہم Atrophy (یعنی ہزار ہزاروں parietal cells) اور بوقت انتہائی

## ❑ Chronic Gastritis

الاعصاب و بہیں عنہم (م) و anemia، و bone marrow کی مقدار سے انتہائی RBC

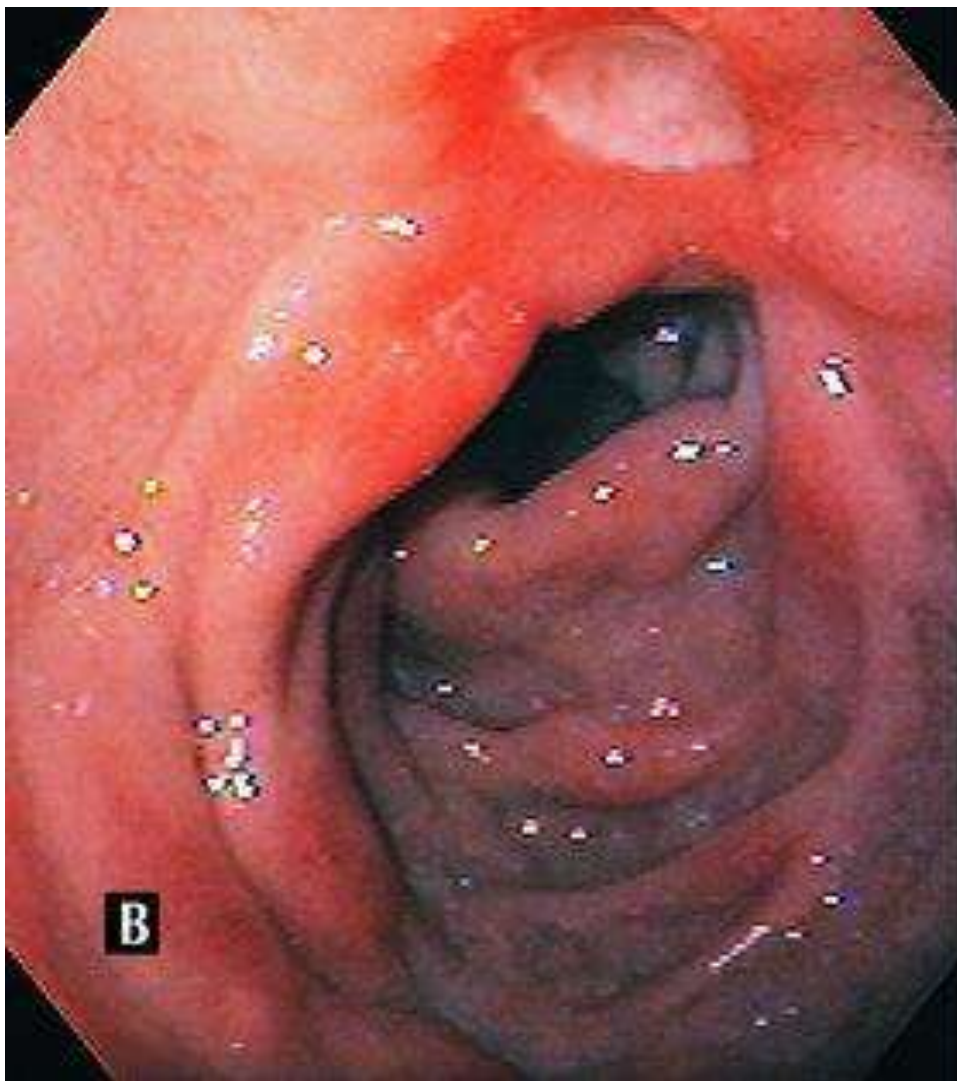
- Characterized by atrophy of the mucosa of the stomach, with loss of the secretory glands.
- The loss of the parietal cells leads to achlorhydria (absence of hydrochloric acid in the gastric secretions)
- Chronic gastritis is often seen in individuals with **chronic peptic ulcers**, those who **abuse alcohol**, and the **elderly**. Autoimmune disorders, for example, **pernicious anemia**, are associated with a type of chronic gastric atrophy.
- Many cases are **idiopathic**.

# Peptic Ulcer Disease

- **Break** in the gastrointestinal mucosa exposed to gastric acid and pepsin more than 5 mm in diameter.
- Maybe acute or chronic.
- The most common forms of peptic ulcers are duodenal and gastric ulcers.
- **Duodenal ulcers** occur five times more common than gastric ulcers.
- Duodenal ulcers are more common in **males** while gastric ulcers affect equally **males and females**.

\* کئی طرح کے

# Duodenal ulcer



Ulcer crater

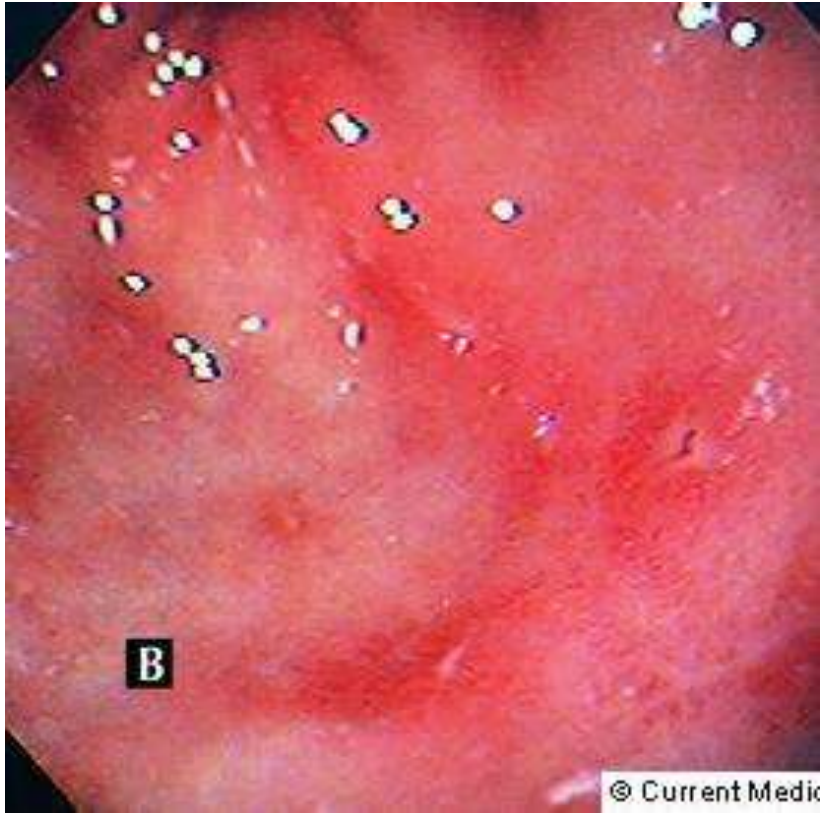
To second  
duodenum

متوازن یا غیر متوازن stomach کی حالت؟ imbalance

EROSION → جگہ پر آؤں

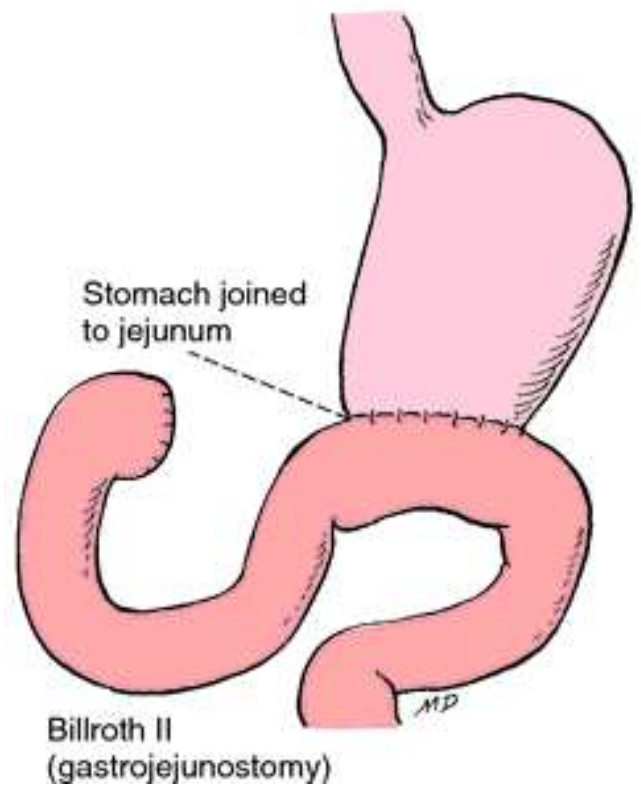
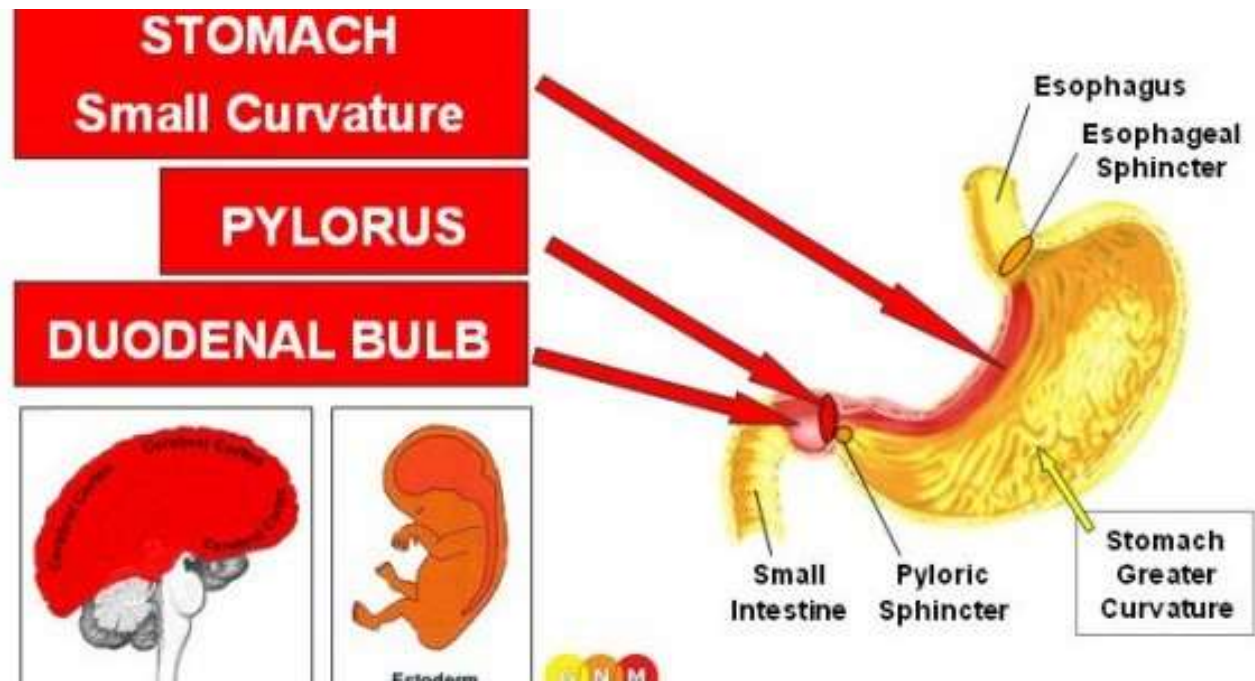
5 mm سے زیادہ stomach کی حالت stomach کی حالت سے زیادہ

muscularis (سختی سے)

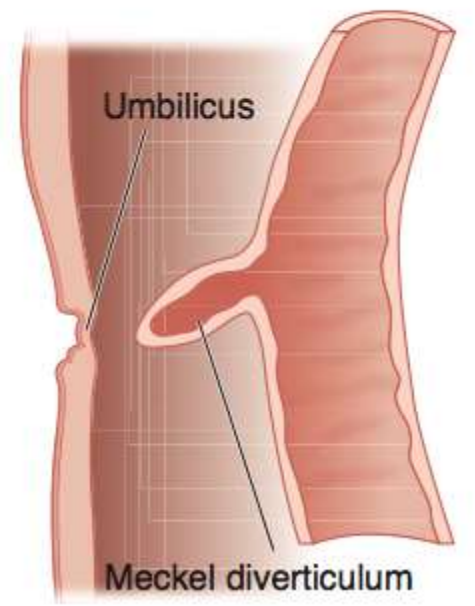


- A break in the GI mucosa- Less than 5 mm in diameter- not penetrating muscularis mucosa.
- May occur in acid-secreting or none acid-secreting mucosa.
- Peristalsis is not affected.
- Heals rapidly.





**Meckel diverticulum**



# AETIOLOGY OF PUD

نوع من أنواع البكتيريا التي تنتشر بأفواه مستنظفة.

## 1. HELICOBACTER PYLORI-ASSOCIATED ULCERS.

وقبل ما افتران الـ prostaglandin التي يبل protection من الـ  $H^+$ .  
COX inhibition الـ pathway

(protein) + Aspirine  $\Rightarrow$

## 2. NSAID-RELATED ULCERS: (Due to inhibition of COX-1, prostaglandin-endoperoxide synthase).

صوت ورم آفة بمنطقة الـ Antrum الـ gastrin

## 3. HYPERSECRETORY STATES: Zollinger-Ellison syndrome is caused by gastrin-secreting tumors in the pancreas or the upper part of your small intestine (duodenum).

بزيادة ما افتران الـ gastrin

زيادة اسرار الـ gastrin الـ تغفر الـ gastrin

## 4. IDIOPATHIC.

# Pathogenesis of PUD

imbalance بين gastritis او ulcer لا يفسر  
Defensive factors و Aggressive  
تقوم بالاجابة من  
او H<sup>+</sup>  
تزيد مع انخفاض H<sup>+</sup>

IMBALANCE  
BETWEEN



- Acid.
- Pepsin.

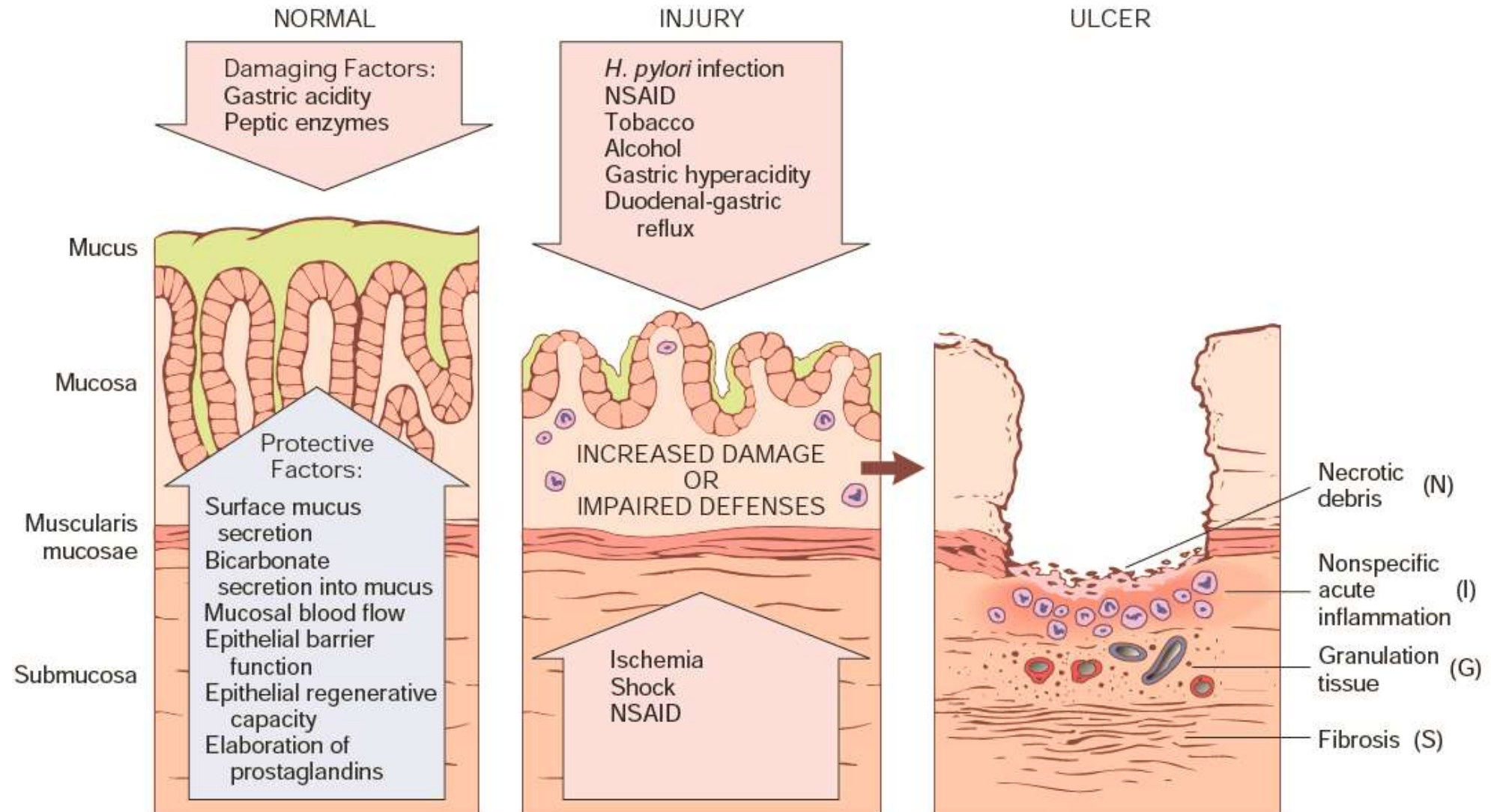
AGGRESSIVE

AND



DEFENSIVE FACTORS

- Prostaglandins.
- Mucosal blood flow.
- Mucus gel layer adherent to the mucosal surface.
- Bicarbonate.
- Tight epithelial junctions.
- Regeneration of the epithelial cell layer.
- Growth factors, eg: EGF.



**Figure 17-11** Mechanisms of gastric injury and protection. This diagram illustrates the progression from more mild forms of injury to ulceration that may occur with acute or chronic gastritis. Ulcers include layers of necrosis (N), inflammation (I), and granulation tissue (G), but a fibrotic scar (S), which takes time to develop, is only present in chronic lesions.

## Epidemiology of PUD

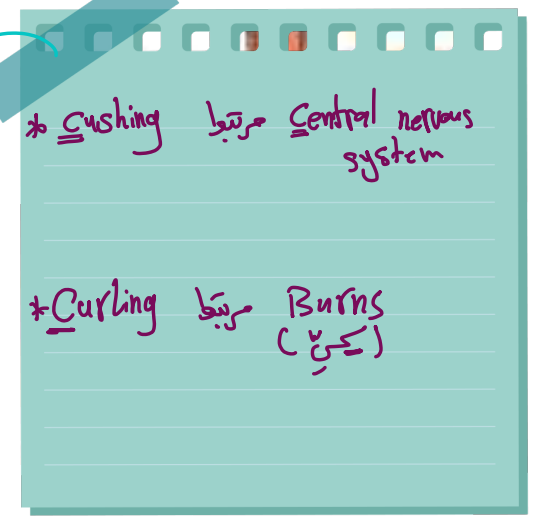
- Prevalence of about 5-10%.
- Varies in different communities.
- Higher prevalence in low socioeconomic classes and with certain diseases.
- DU more in males: M/F: 3:1.
- GU is equal in both sexes but increases with age.
- **FAMILY HISTORY:** 3-4 increased risk.
- **CIGARETTE SMOKING:** ulceration increased.
- **EMOTIONAL DISTURBANCES and STRESS:** increase gastric acid secretion.

ايضا العلاقة بال stress في صوت

# Stress Ulcers

ارجعوا افنى

Fundus بجس بال



physiologic stress المقصود

Develop in response to major physiologic stress.

People at high risk for the development of stress ulcers include:

1. patients with large-surface-area burns (Curling's ulcer).

الحروق الواسعة  
تسبب الدم الجرحوي

صعده تنفس ضيق

العثر من لصل  
صعده مترا  
لوا التهابات حارة

2. patients exposed to trauma, sepsis, acute respiratory distress syndrome, severe liver failure, and major surgical procedures.

3. People admitted to hospital intensive care units. (ICU)

Location of stress ulcers is in the fundus and body of the stomach and are thought to result from ischemia to the mucosal tissue and alterations in the gastric mucosal barrier.

اصاب باره الراس والدماغ

عمليات الدماغ

\*Another form of stress ulcer, called Cushing ulcer: intracranial injury, operations, or tumors.

اورام الدماغ

# CLINICAL PICTURE OF PUD

ادا بوزداكل بحس حاله مرتاح،  
weight gain صور

Duodenum  
ulcer

gastric  
ulcer  
بعد زلاكل  
بالراح مرتاح  
افعال مرتاح  
الاعم منالتي  
راح يهس خنده

weight  
loss

ما يقدر احكي تقبله فيه بيومه ما افسد نوع ال  
ulcer

## • Signs and Symptoms of PUD:

- Epigastric pain.
- Dyspepsia (Belly pain or discomfort, Bloating, Feeling uncomfortably full after eating, Nausea, **Loss of appetite,** Heartburn).
- May be asymptomatic.



لكني تبخينا نمل بوجود مفرحة بس هي متكامنة  
عنه نيزم وفعلي تشخيصي

Clinical picture is **suggestive** but not diagnostic.

✓ Diagnosis best by **endoscopy**.

في بترج المرين امتوي ما

✓ Barium meal is less helpful (infusion of the contrast medium barium sulfate, a radioopaque salt, coats the lining of the digestive tract, allowing accurate X-ray imaging of the esophagus, stomach, and small bowel).

✓ Serum gastrin; indicated if Zollinger-Ellison syndrome is suspected.

✓ Evaluation for H. pylori infection.  
خزعة (small sample)

✓ Gastric ulcer should be **biopsied** to exclude malignancy.

عنه يتوونا اذا فيه malignancy

في دم صيرت (صولة العنة)

بس تبضيل اقل عايزة منه المنظار

تعمل تلويب لل stomach و esophagus  
يعني يهلوا X-Ray

Barium sulfate

## Diagnosis of PUD

Zollinger-Ellison

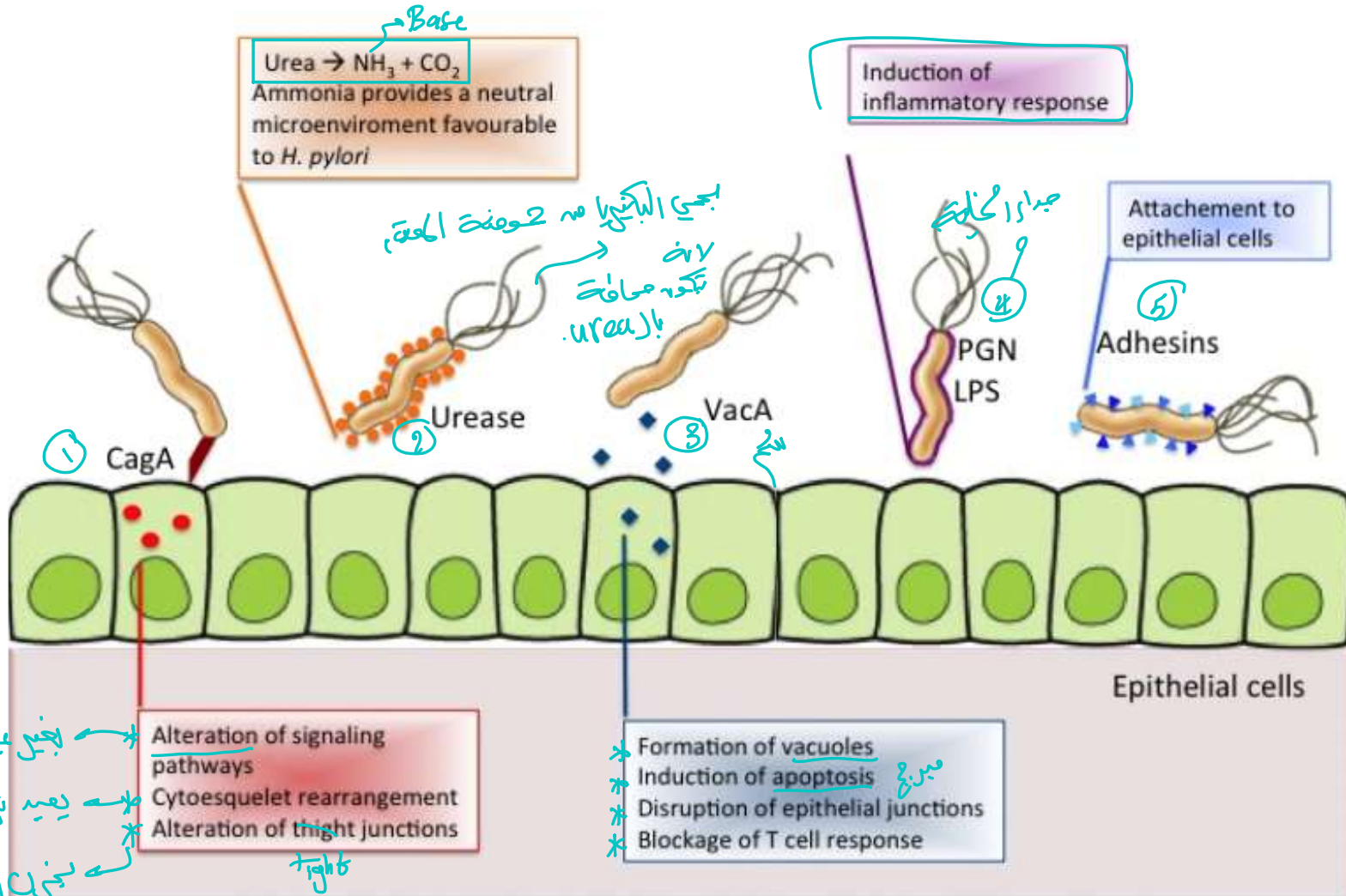
Blood Test

في دم صيرت (صولة العنة)

5 mechanisms of H. pylori

# Helicobacter pylori

Gastric Lumen



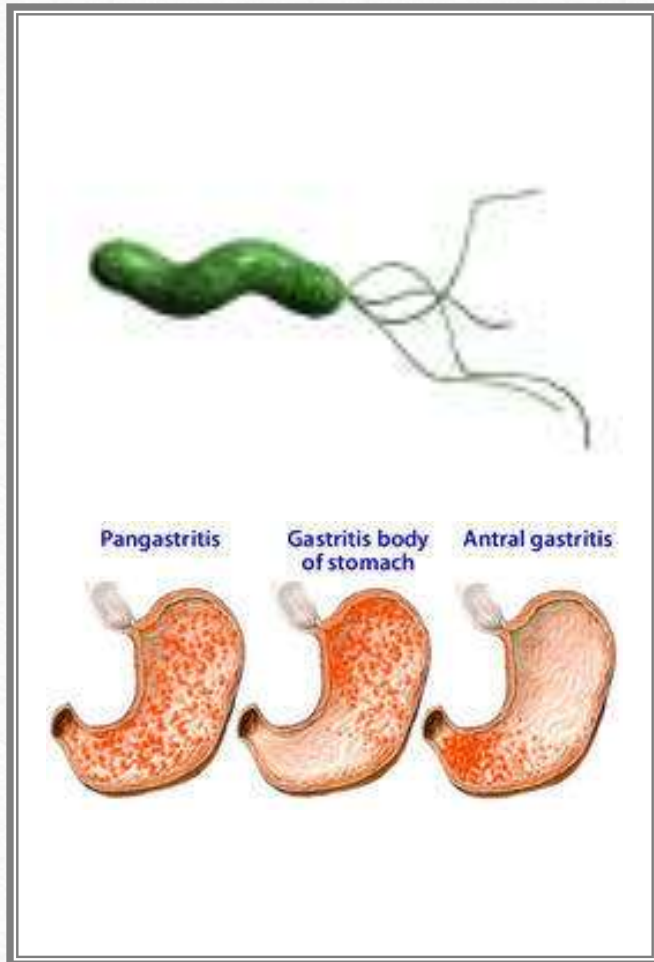
Alteration of signaling pathways  
Cytoskeleton rearrangement  
Alteration of tight junctions

Formation of vacuoles  
Induction of apoptosis  
Disruption of epithelial junctions  
Blockage of T cell response

Handwritten notes in Arabic:

- تغيير مسارات الإشارات (Change signaling pathways)
- إعادة ترتيب الهيكل الخلوي (Cytoskeleton rearrangement)
- تغيير مسارات T cell response (Change T cell response)
- تغيير مسارات tight junctions (Change tight junctions)

# *Helicobacter Pylori*



- **Bacteria**

- Gram -ve spiral bacterium.

- 40% of patients >60 yrs are +ve for H.pylori.

- Transmitted: possibly person to person.

- Most common cause of antral gastritis (antrum part is the last part of the stomach toward the duodenum).

عضوي بالانترام

gastritis

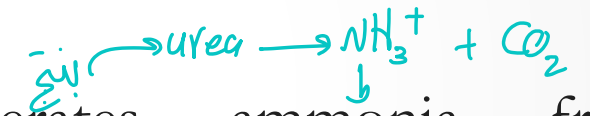
# Helicobacter Pylori

## • Mechanism of gastric injury:

- Breakdown of mucosal defenses
- Increase gastrin-releasing peptide (GRP).
- Decrease bicarbonate secretion.
- Flagella, which allows the bacteria to be motile in viscous mucus.
- Urease, which generates ammonia from endogenous urea and thereby elevates local gastric pH and enhances bacterial survival.
- Adhesins that enhance bacterial adherence to surface foveolar cells.
- Toxins, such as cytotoxin-associated gene A (CagA), may be involved in disease progression (such as induction of gastric cancer).

Prostaglandins  
membrane  
Bicarbonate ↓  
Tight junction

Neutralization (الحموضة ←)



Flagella → Adhesion → disease progression

# Role of H.pylori in GI diseases

Two types of cancer

Healthy subjects 20-50%

Chronic active gastritis 100%

Duodenal ulcer >90%

Gastric ulcer 50 - 80%

Gastric adenocarcinoma 90%

Gastric lymphoma 85%

ليكون نسبة حدوثها للتدرج الي عديم chronic gastritis، عديم التآكل الذي يصيب  
ليكون ما عندهم هالي الانواع نسبة حدوثها 20-50% وليكون عديم هالي الانواع يتكون النسبة 100%.

## Diagnosis of Helicobacter pylori infection

بعضها تنظير endoscopy ، بعضها Culture (زرعة) Biopsy  
لا Biopsy ويحطوا عليها areas enzyme ، بعضها على راح تطلع ربيحة ammonia ولا

### Invasive (through endoscopy):

- Gastric biopsy and staining.
- Culture of the bacterial specimen.
- Tests using urease enzyme in bacterial specimens.

### Non-invasive:

- Urea breath test. → ليحوا
- H. pylori antibodies.
- Stool antigen.
- Salivary antigen.

بعضها من طريق Blood Test  
لا H. pylori Anti-body  
لا Stool Antigen له H. pylori  
بعضها موجود في stool وبار salivary

**Table 17-4** Complications of Peptic Ulcer Disease

**Bleeding**

Occurs in 15% to 20% of patients  
Most frequent complication  
May be life-threatening  
Accounts for 25% of ulcer deaths  
May be the first indication of an ulcer

**Perforation**

Occurs in up to 5% of patients  
Accounts for two thirds of ulcer deaths  
Is rarely first indication of an ulcer

**Obstruction**

Mostly in chronic ulcers  
Secondary to edema or scarring  
Occurs in about 2% of patients  
Most often associated with pyloric channel ulcers  
May occur with duodenal ulcers  
Causes incapacitating, crampy abdominal pain  
Can rarely cause total obstruction and intractable vomiting

عند تشخيص  
المرض

# TREATMENT OF PEPTIC ULCER DISEASE

هدف العلاج :-

## • AIM OF TREATMENT:

- RELIEVE SYMPTOMS. الاعراضنا نرفع
- HEAL THE ULCER. نبرم القاعه ulcer
- PREVENT COMPLICATIONS. منع حدوث complications
- PREVENT RECURRENCES. منع ال Recurrences

(منع ال Recurrences) (منع ال Recurrences)

Antacids من كيميائيين يفضلون  
مع انه رخيصا (مهمه عتانه رخيصا)  
منه منج حقا لعل (side effects كمن)

## ANTACIDS

اذا التوا اخذت مع عده ماصه  
الح يصل فعال ل 10-20 دقيقه  
اما اذا اخذت مع عده ماصه  
بعد اكل الوجبه وانه Antacids  
يصل 10-20 د. ايضا از تستي  
الحبة الح كمن no less effective  
suspensions

- Rapid symptomatic relief.
- Cheap.
- Large amounts are required to heal ulcers leading to undesirable side effects.
- If taken on an empty stomach; they are effective only for 10-20 minutes.
- If taken one hour after meals, they are effective for 2-3 hours.
- Tablet preparations are less effective than suspensions.

# HISTAMINE- RECEPTOR ANTAGONISTS (H2-Blockers)

- Act through blocking H<sub>2</sub> receptors in the parietal cells.
- Suppress nocturnal acid secretion by more than 90%.
- Suppress 24-hour acid secretion by 50-70%.
- Side effects :
  - CNS effects: headache, mental confusion.
  - Reversible gynecomastia and impotence.
  - Interaction with drugs metabolized through hepatic cytochrome P-450 microsomal enzymes

had yin' or secretion H<sub>2</sub> + H<sub>1</sub>  
24 hour 50-70% reduction  
at night 90% reduction  
not for all patients

serious side-effect:

- CNS (mental confusion)
- for men → impotence

Gynecomastia

interaction with other drugs

liver metabolized

الساؤم تائى د line

## HISTAMINE- RECEPTOR ANTAGONISTS (H<sub>2</sub>-Blockers )

CIMETIDINE

RANITIDINE

(FAMOTIDINE )

NIZATIDINE

# PROTON PUMP INHIBITORS (PPIs)

احسن من ال h2- receptor blocker

حيث انه يثبط على مدار اليوم اكثر من 90% يثبط ال h+ اكثر من 90% وما في حالات tumors او cancer للناس يلي استخدموه لمدة طويلة وتقريبا 50% يلي اخذه يشفى بعد اسبوعين و90% منهم بعد اربع اسابيع ومعظم الناس يلي توخذهم من 6 ل 8 اسابيع يشفى بالكامل

Suppress acid secretion by non-competitively and irreversibly inhibiting the H<sup>+</sup> , K<sup>+</sup>- ATPase of the gastric parietal cells.

Inhibit over 90% of 24-hour acid secretion.

Increase secretion of gastrin usually 2-3 times the baseline with proliferation and growth of ECL cells.

No carcinoid tumors were reported occurring in men due to PPIs.

Heal 50% of DUSs by 2 weeks, 90% in 4 weeks, and almost all by 6-8 weeks.

مضاد الحموضة  
↓

# PROTON PUMP INHIBITORS (PPIs)

- Omeprazole: 10, ~~20~~ mg
- Lansoprazole: 15, ~~30~~ mg
- Pantoprazole: 20, ~~40~~ mg
- Rabeprazole: 10, ~~20~~ mg
- Esomeprazole: ~~20~~, 40 mg
- Tenatoprazole: 40 ~~mg~~: longer duration of action

10 x 15  
من كبريتي  
انها اللى ما يبي  
العقود

يعني اقضي عليها بشكل كامل لانها  
infection ولازم اعطيهم antibiotic  
رح نؤخذهم بالفارما نؤخذهم هونؤخذ كم  
المدة

## Eradication therapy for H.Pylori

- **In vivo, sensitive to the following agents:**

- amoxicillin

- tetracyclin

- clarithromycin

- Metronidazole, tinidazole

- bismuth

- PPIs (proton pump inhibitor)

- **Second line drugs:** Levofloxacin,  
gatifloxacin, rifabutin

} Anti-  
biotics

## Surgery for PUD

- Rare after the introduction of effective therapeutic agents except for complications.

هل ربح احتمالاً الكروموسوم على عملية له ما فيه PPIs؟ جيبنا؟  
PPIs أو التهاب H. pylori infection وافيه see eradication therapy  
الغالبية العظمى من التهابات المعدة (medications) لا

سurgery  
Pep tic acid  
ما زال كتابي

# Gastroesophageal Reflux Disease (GERD) REFLUX ESOPHAGITIS

- Backward movement of gastric contents into the esophagus causing heartburn (burning chest pain) resulting from recurrent mucosal injury, often worse at night, when lying supine, or after consumption of foods or drugs that diminish lower esophageal sphincter tone.
- Associated with transient relaxations of the weak or incompetent lower esophageal sphincter.

مرتبطة با (Relaxation) العابر من المعدة الى المريء او (weak) او (incompetent) (اقول كفاية)

# Clinical Manifestations

عزّ عذّ

## ➤ Heartburn:

- A. It is frequently severe,
- B. occurring 30 to 60 minutes after eating.
- C. It often is made worse by bending and lying down
- D. is relieved by sitting upright. *تخف لما الواض يقعد*
- E. Often, heartburn occurs during the night.

*تزيد سوء  
عند الواض ينام.*



## ➤ Belching

*تجسّد*

## ➤ Chest pain (may be confused with angina).

*بعض miric عو (Angina)*

*chest pain*

1. is located in the epigastric or retrosternal area and
2. often radiates to the throat, shoulder, or back.



*يقع في منطقة (epigastric) و (Retrosternal) وغالبًا حاجية، لمر الحلة او الكف او الفم فالواض جسي الحلة  
بعض اصناف*

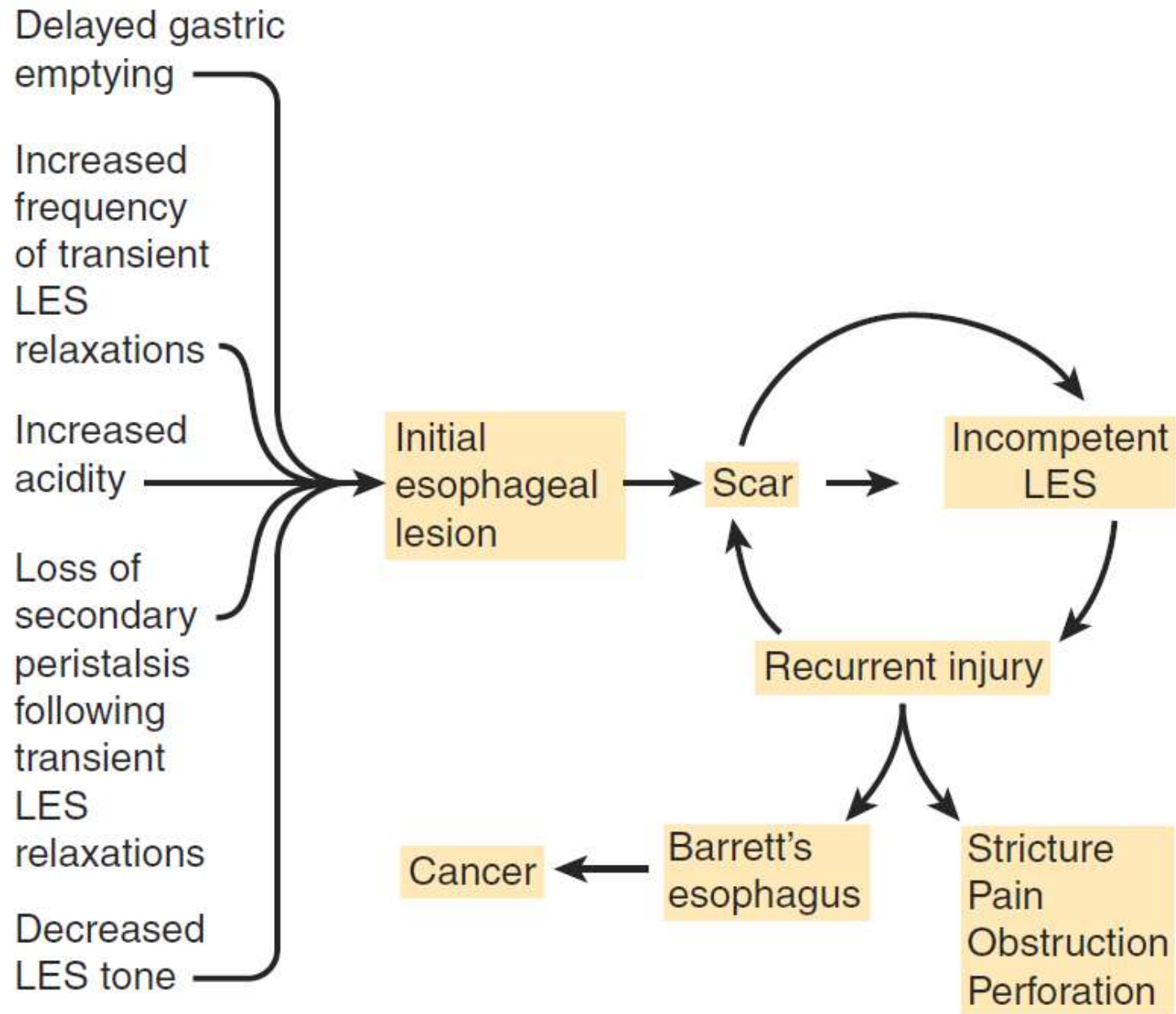
## ➤ Respiratory symptoms such as asthma (vagal-mediated bronchospasm), chronic cough, and laryngitis.

- Complications, such as strictures and *Barrett esophagus*.
- **Barrett esophagus** is characterized by a reparative process in which the squamous mucosa that normally lines the esophagus gradually is replaced by abnormal columnar epithelium resembling that in the stomach or intestines. It is associated with increased risk for the development of esophageal adenocarcinoma.



لما يصير عندك weakness جبال lower esophageal sphincter  
 وبصير عبارة عن barret esphagus يصير metaplasia تغير بنوع ال cellلنوع cell اخر  
 ومعرضين لينصابوا بال cancer  
 ممكن يصير عندهم esophageal adenocacinoma  
 هدول الناس يعانوا من حرقة heartburn يكون كثير متأزم يحدث تقريبا بعد نص ساعة لساعة بعد الاكل  
 ويزيد حالته سوء اذا نام ويرتاح لما يقعد  
 ويزيد اكثر في الليل ويحس في مثل سكاكين  
 وللأسف في ناس تحكي بحس حالي يدي انجلط لانه ال pain يلي تعمله يشبه بال pain لل angina يلي يمتد من ال neck  
 ويمكن يعمل respiratory symptoms لانه ال esophageus قريب من لل respiratory system فهدول ممكن يعمل عندهم asthma  
 ويعمل cough ويمكن يعمل عندهم التهاب لل  
 Angitis

**FIGURE 45.4** • The presence of the tan tongues of epithelium interdigitating with the more proximal squamous epithelium is typical of Barrett esophagus. (From Rubin R., Strayer D. S. (Eds.) (2012). *Rubin's pathophysiology: Clinicopathologic foundations of medicine* (6th ed., p. 611). Philadelphia, PA: Lippincott Williams & Wilkins.)



**FIGURE 13-17** Pathophysiology of esophageal reflux disease.

**TABLE 13-5** Modulators of lower esophageal sphincter pressure.

	Increase Pressure	Decrease Pressure
Hormones	Gastrin	<u>Secretin</u>
	Motilin	<u>Cholecystokinin</u>
	Substance P	<u>Somatostatin</u>
		Vasoactive intestinal peptide (VIP)
		<u>Progesterone</u>
Neural agents	$\alpha$ -adrenergic agonists	$\beta$ -adrenergic agonists
	$\beta$ -adrenergic antagonists	$\alpha$ -adrenergic antagonists
	Cholinergic agonists	Anticholinergic agents
Foods	Protein meals	Fat
		Chocolate
		Peppermint
Other	Histamine	Theophylline
	Antacids	Prostaglandins E <sub>2</sub> , I <sub>2</sub>
	Metoclopramide	Serotonin

ال decrease لل lower esophageal sphincter  
 يوم يقل ال pressure تبعه يعني  
 يصير عندي weakness  
 بدك تعرف ال factors يلي تقلل  
 ال Pressure

ال dec. ال اعتر عتانه  
 بهمني اعرف مني  
 بهمني weakness

Pathophysiology of Disease: An Introduction to Clinical Medicine Seventh Edition, 2010

# Treatment

- The treatment of gastroesophageal reflux usually focuses on **conservative measures.**
- Avoidance of **positions and conditions** that increase gastric reflux.
- Avoidance of **large meals and foods** that reduce lower esophageal sphincter tone (*e.g.*, **caffeine, fats, chocolate**), alcohol, and **smoking.**
- **Medication:**
  - **Antacids** or a combination of antacids and alginic acid. Alginic acid produces foam when it comes in contact with gastric acid; if reflux occurs, the foam rather than acid rises into the esophagus.
  - Histamine-2 receptor (H<sub>2</sub>)-blocking antagonists.
  - Proton pump inhibitors.
- Surgical treatment may be indicated in some people.

Female بار أكثر من male  
نسبة 1:2

# Cancer of

الاسباب

Family history

واحد ييوكل اكل غير صحي وفيه مواد مسرطنة واحد يوم

كل اكل معلب بكثرة يؤدي لسرطان المعدة

واحد صار عنده gastritis يلي هو chronic gastritis بسبب

ال autoimmum

واحد عنده polyps ورم حميد لازم تنشال لانه نسبه تحولها لسرطان

جدا عالي

او واحد صار عنده h-pylori جدا سيء اذا لم تتم معالجتها

One of the leading causes of death in the united states.

It exhibits a male to female ratio of 2:1.

Risk factors for stomach cancer include:

- Genetic predisposition.
- Carcinogens in the diet (nitroso compounds found in smoked and preserved food).
- Autoimmune gastritis.
- Gastric adenoma and polyps.
- Chronic infection by H.pylori act as a cofactor for some carcinomas.

## Cancer of stomach

- Unfortunately, stomach cancers often are asymptomatic until late and early detection is usually difficult.
- Symptoms include:
  - Indigestion. → لسه هضم
  - Anorexia nervosa. بستغى اى شئ  
بكله
  - Weight loss.
  - Epigastric pain. وجع بطن المعدة.
  - Vomiting.
  - Abdominal mass.

# Cancer of stomach

## □ Diagnosis is accomplished by:

- Barium x-ray studies.
- Endoscopy and computed tomography (CT)-scan.
- Biopsy and cytologic studies of the gastric secretions.

## □ Treatment:

- Radical subtotal gastrectomy is the treatment of choice.
- Radiation and chemotherapy may be used for palliative purposes or to control the metastatic spread of the disease.

من الاستساع  
والعلاج  
الجراحي

كعلاج

كلية استساع  
جزء من المعدة

صِبْ حَكْمِي الدَّكْتُورَةَ : بِمَا الْإِكِيدِ  
حَارِي عَلَيْهِ اسْتَلَاةً (غَالِبًا فِي CASES)  
عَلَيْهِ

# Intestinal disorders

## Irritable bowel syndrome

- It is a persistent or recurrent symptom of abdominal pain, altered bowel function, and varying complaints of flatulence, bloating, nausea and anorexia, constipation or diarrhea, and anxiety or depression.
- The pain is relieved by defecation and associated with a change in consistency or frequency of stools.
- The pain is usually intermittent **cramping in the lower abdomen**. It does not interfere with sleep.
- It results from dysregulation of intestinal motor and sensory function modulated by CNS. Motility is increased as a response to stress.
- **Women are more affected compared to men.**

لَا تُولُ عَمَّ بِالتَّارِخِ .

من اسمه irritable bowel syndrome او inflammatory bowel syndrome نعرف انه نوع من أنواع ال التهابات

في نوع يصير بأي جزء من GI

ونوع الثاني ممكن يحدث ب section of GI

اهم اشئ تعرف بهاد النوع كيف الناس تعرف انه عندها هاد النوع

يلي يصير عندهم تغيرات بال bowel يلي هي defecation الاخراج اذا كان متعود يخرج كل يومين ثلاث و صار يخرج كل اسبوع

او كل يوم صار عنده نوع من ال constipation and diarrhea واستمرت هاي الاعراض ل ١٢ اسبوع لازم يتأكد انه ما عنده

irritable bowel syndrome

مو بس كم مرة اخرج كمان ال form طبيعة ال stool يلي يطلع يكون مختلف عن يلي الاشئ يلي متعود عليه بالشكل الطبيعي

الاعراض يلي تكون عليهم لما يجي الناس يلي عنهم ال irr.bow.syn.

وجع بالبطن abdominal pain

تغير alteration بال bowel movement. يا يكون diarrhea او constipation

يصير عندهم انتفاخ flatulence & bloating

يعصبوا anxiety

اكتئاب depression

متى يروح الألم بعد ما يخرج وهاد other sign انه عنده irr.bow.syn

هدول يصير عندهم dysregulation لل motor and sensory function ال modulate by centre nervous system

لانه عنده already يا diarrhea او constipation ف يتغير ال activation and deactivation لل sympathetic & parasympathy activity

هدول الناس مباشرة لما يتعرضوا لتوتر يصير عندهم diarrhea النساء اكثر تأثرا من الرجال

صار تعادلا مع ال male

## Diagnosis:

- Continuous or recurrent symptoms of at least 12 weeks duration with two of three accompanying features: relief by defecation, onset is associated with a change in bowel frequency, and associated with a change in form of stool.
- History of lactose intolerance should be considered.
- Weight loss, anemia, fever, occult blood in the stool or nighttime symptoms, or malabsorption increases the likelihood of organic disease (any disease where observable measurable process such as inflammation and tissue damage).

## كيف نعمل diagnosis

الناس يلي تستمر الاعراض عندهم ل ١٢ اسبوع تقريبا وتروح مع الاخراج كيف يعرف انه عنده ؟ يا انه تغير بال bowel frequency بكم مرة يخرجوا او form شكل ولون ال stool يختلف في اشى اسمه ال lactose intolerance في عندك اطفال انواع معينة من الحليب بس يصير معه المرض يصير معه diarrheea او constipation تجرب معه كل انواع الحليب ما بزبط معه يوم تجيب له حليب خالي من السكر ال lactose يمشي معه هدول اهلهم عندهم irr.bow.syn يلي عندهم هيك ما بتحملوا ال lactose رح يصير عندهم فقدان بالوزن و فقر دم لانهم ما بياكلوا وبصير عندهم حرارة وممكن يظهر عنده كتل blood بال stool مش مرتاح ما بعرف ينام يصير عندهم سوء امتصاص لانه مش عم ياكل كثير وحتى لو اكل كثير في عنده diarrheea ما في عنده تواصل بين الاكل والمعدة قليل ف سوء امتصاص نقصان بالمعادن وفيتامينات وفقدان الوزن

Antispasmodic  
القولنج

(sympathetic) contraction

## Treatment

□ No special diet is indicated but adequate fiber intake is recommended.

□ Avoidance of offending food such as fatty and gas-producing foods, and alcohol. Caffeine-containing beverages could be beneficial.

□ Pharmacological therapy includes antispasmodic and anticholinergic drugs.

↓ diarrhea, gas

↓ Parasympathetic

↓ sympathetic

بال mucosa تقع ال Rectum + colon

➤ These include:

● Ulcerative colitis: nonspecific inflammatory bowel disease of unknown etiology that affects the mucosa of the colon and rectum.

يصل باقي جزء ال GI

● Crohn's disease: nonspecific inflammatory bowel disease that may affect any segment of the GIT.

● Indeterminate colitis: 15% of patients with IBD are impossible to differentiate.

Sharing (علاج - inflammation)  
Family history  
الأسباب ال وراثية

# Inflammatory Bowel Disease

60% > Common نوع

# Crohn's disease and ulcerative colitis share:

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- ✓ Inflammation of the bowel.
- ✓ Lack of confirming evidence of the proven causative agent.
- ✓ Pattern of familial occurrence.
- ✓ Accompanied by systemic manifestation.
- ✓ Crohn's can affect any area of GIT from the esophagus to the anus while ulcerative colitis affects the colon and rectum.
- ✓ In Crohn's, the inflammation is often transmural but ulcerative colitis is typically restricted to the mucosa.

التهاب باحفاصل inflammatory  
inflammatory cells  
inflammatory mediators  
Activation

# Crohn's disease

## Clinical manifestation



They both result from the activation of inflammatory cells with the elaboration of inflammatory mediators that cause nonspecific tissue damage.

- They characterize by remission and exacerbations of diarrhea, fecal urgency, and weight loss and it may lead to intestinal obstruction as a complication.

التهاب باحفاصل

- Systemic manifestations include axial arthritis, inflammation of the eye, skin lesions. Inflammation of the mucus membrane of the mouth (stomatitis), blood disorders (anemia and hypercoagulability) and inflammation of the bile duct. In children, it causes growth retardation.

إصابة لثة الفم أو بصيلتين  
Diarrhea

# Crohn's disease

## Treatment

- Treatments focus on terminating inflammation, promoting healing, maintaining adequate nutrition, and preventing complications.
- Nutritious diet rich in calories, vitamins, and proteins is recommended, fat is better to be avoided.
- Medical therapy included:
  - **Corticosteroids** (suppress acute clinical symptoms).
  - **Metronidazole** (treats bacterial overgrowth in the intestine).
  - **Immunosuppressants** (azathioprine, 6-mercaptopurine, methotrexate and cyclosporine).
  - **Monoclonal antibodies** (anti-TNF agents) for severe disease. (Etanercept, adalimumab, infliximab).

بداء العلاج بالاعراض المناعية  
لا يتبق الجهاز المناعي

# Ulcerative colitis

## Risk factors

- **Age:** commonly less than 30.
- **Race or ethnicity:** white is at higher risk.
- **Genetic.**
- **Diet (fatty diet) or oral contraceptives** increase the risk of the disease.

أكثر حدوث عند النساء  
خصوصاً التي يتوضعن حبوب منع الحمل.

أكثر شيوعاً

تكرار (للإصابة)

# Ulcerative colitis

## Clinical manifestation

- Marked by attacks of **diarrhea** that may persist for **days**, **weeks**, or **months** and then subside, **diarrhea usually with blood**.
- Anorexia, weakness, and fatigue.
- In severe disease, fever, anemia, **hypovolemia** and **hypoalbuminemia** are common.  
*سألة* *فقير دم* *لح لا ير البلاء عنده* *diarrhea* *تقل نسبة ال Albumin بالدم*
- In children, **failure to growth**
- **Cancer of the colon is a common complication of ulcerative colitis.**

القولنج

# Ulcerative colitis

## Treatment

التهزبه كتن كتن

❑ Avoid caffeine, lactose, and gas-forming food.

لتجنب الاكل اللي فيه lactose / غازات / قهوه  
و كتن من اللي فيه Fibres / proteins

❑ Doctor may recommend high protein, a high-calorie eating plan that is low in fiber.

❑ Drugs including corticosteroids and **TNF inhibitors** can be used.

Tumor necrosis factor  
مثل صبة اجهزة المناعي

❑ Unlike Crohn's disease, nicotine has shown clinical and histological improvement.

بعد دوا القولنج

❑ Unlike Crohn's disease, UC responds to treatment by probiotic therapy.

تساو القولنج  
لتجنب ال ulceration  
البكتريا النافعة

❑ Iron is given to treat anemia resulting from intestinal bleeding.

❑ Unlike Crohn's, UC can be cured by surgical removal of the colon.

# Colorectal carcinoma

Crohn's داء كرون

- Colorectal cancer affects about 1 million persons worldwide.
- It peaks at **60-70 years of age** in patients with:
  - **Family history of cancer.**
  - **Persons with Crohn's disease or ulcerative colitis.**
  - **Persons with familial adenomatous polyps of the colon.**
- Diet including fat (increase bile salt synthesis) and refined sugar are harmful, while fiber intake (increases stool bulk and removes carcinogens) and vitamins such as vitamin **A, C, and E** are of great benefit in neutralizing carcinogens.
- Aspirin has shown some benefit in prevention by inhibiting COX-2 which is overexpressed in colorectal cancer.

بعض اسباب سرطان القولون

Non-steroidal anti-inflammatory دواء مضاد للالتهاب غير الستيرويدي

**Colorectal  
carcinoma  
Clinical  
manifestation**

ما اكتشفوه الا بعد عدة سنوات

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Colon cancer may present for a long period of time without symptoms.

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Bleeding is the symptom that causes the person to seek medical care.

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Change in bowel habits, diarrhea or constipation, sense of urgency, or incomplete emptying of the bowel.

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Pain usually is a late symptom.

بشكل متأخر جداً

اعراض  
لفظها

# Colorectal carcinoma

## Diagnosis and treatment

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### □ Diagnosis:

- It can be detected by barium enema or colonoscopy, CT scan, pelvic magnetic resonance imaging (MRI), and ultrasonography can also be used.

### □ Treatment:

- The only recognized treatment is **surgical removal**.

○ Preoperative radiation therapy may be used.

○ Postoperative adjuvant chemotherapy is used.

# الستيروئيد ' و pre و post

معنى neoadjuvant } pre و عتار قبله معجم الدرهم  
} عتار بعد علة انتكاله chemotherapy

- **Neoadjuvant** = قبل العملية (الهدف: تصغير وتسهيل الجراحة).
- **Post / Adjuvant** = بعد العملية (الهدف: تنظيف وتطهير لمنع الارتداد).

# Thank You