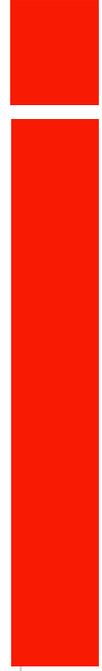
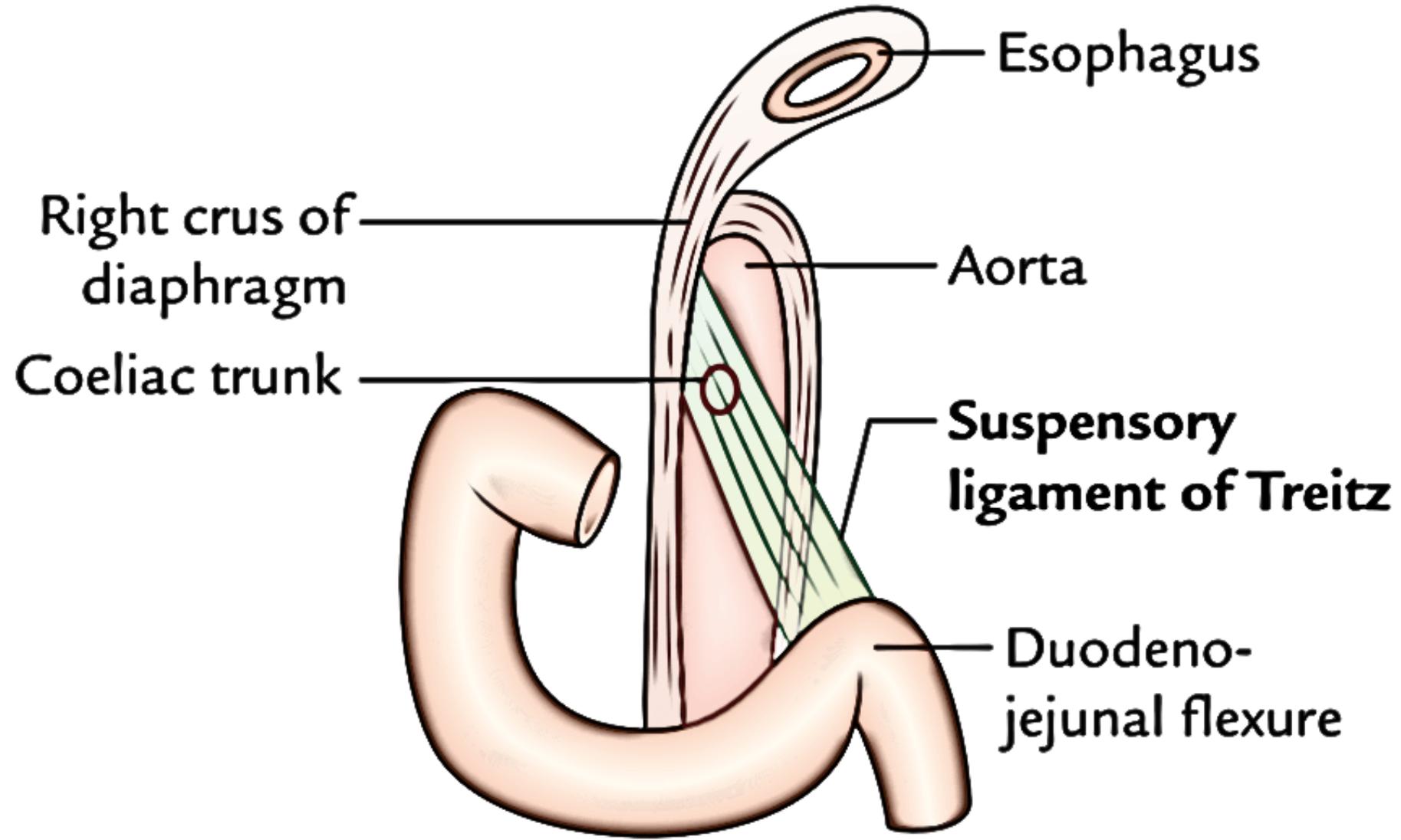


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Approach to upper GI bleeding

introduction

- Acute gastrointestinal bleeding is a potentially life-threatening abdominal emergency that remains a common cause of hospitalization.
- Upper GI bleeding is a bleeding in the GI tract which is proximally to the **ligament of Treitz**.
- **The ligament of Treitz**, also known as the suspensory ligament of the duodenum, is a double fold of peritoneum suspending the duodenojejunal flexure from the retroperitoneum.
- UGIB is 4 times as common as LGIB, with a higher incidence in males.



introduction

- Patients with acute upper gastrointestinal (GI) bleeding commonly present with **hematemesis** (vomiting of blood or coffee-ground-like material) and/or **melena** (black, tarry stools).
- The initial evaluation of patients with acute upper GI bleeding involves an assessment of **hemodynamic stability** and **resuscitation** if necessary.
- Diagnostic studies (usually **endoscopy**) follow, with the goals of diagnosis, and when possible, treatment of the specific disorder.

Causes

- ***Esophageal causes:***

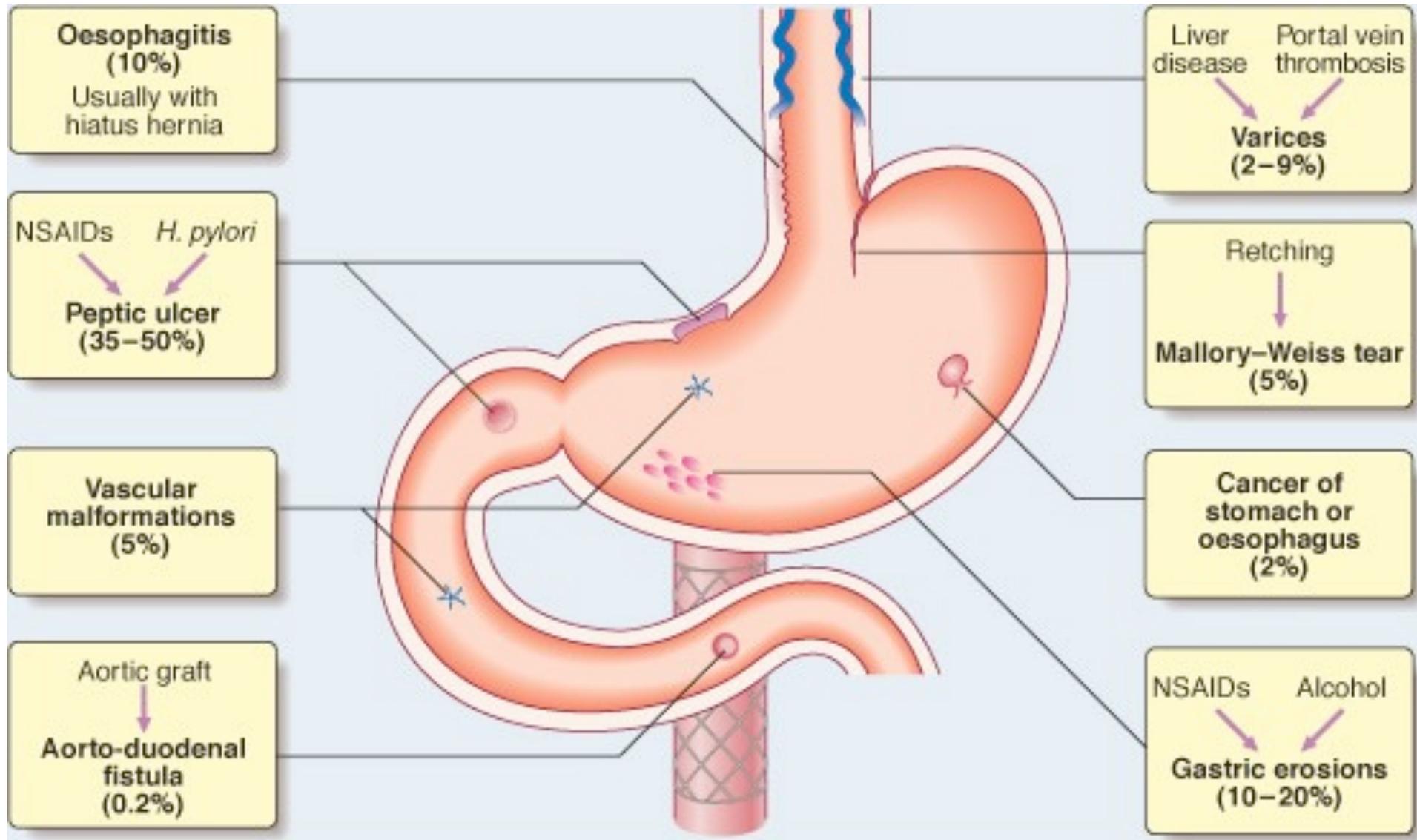
- Esophageal varices
- Mallory-Weiss tear
- Esophagitis
- Esophageal cancer
- Esophageal ulcers

- ***Gastric causes:***

- Gastric ulcer
- Gastric cancer
- Gastritis
- Gastric varices
- Dieulafoy's lesions

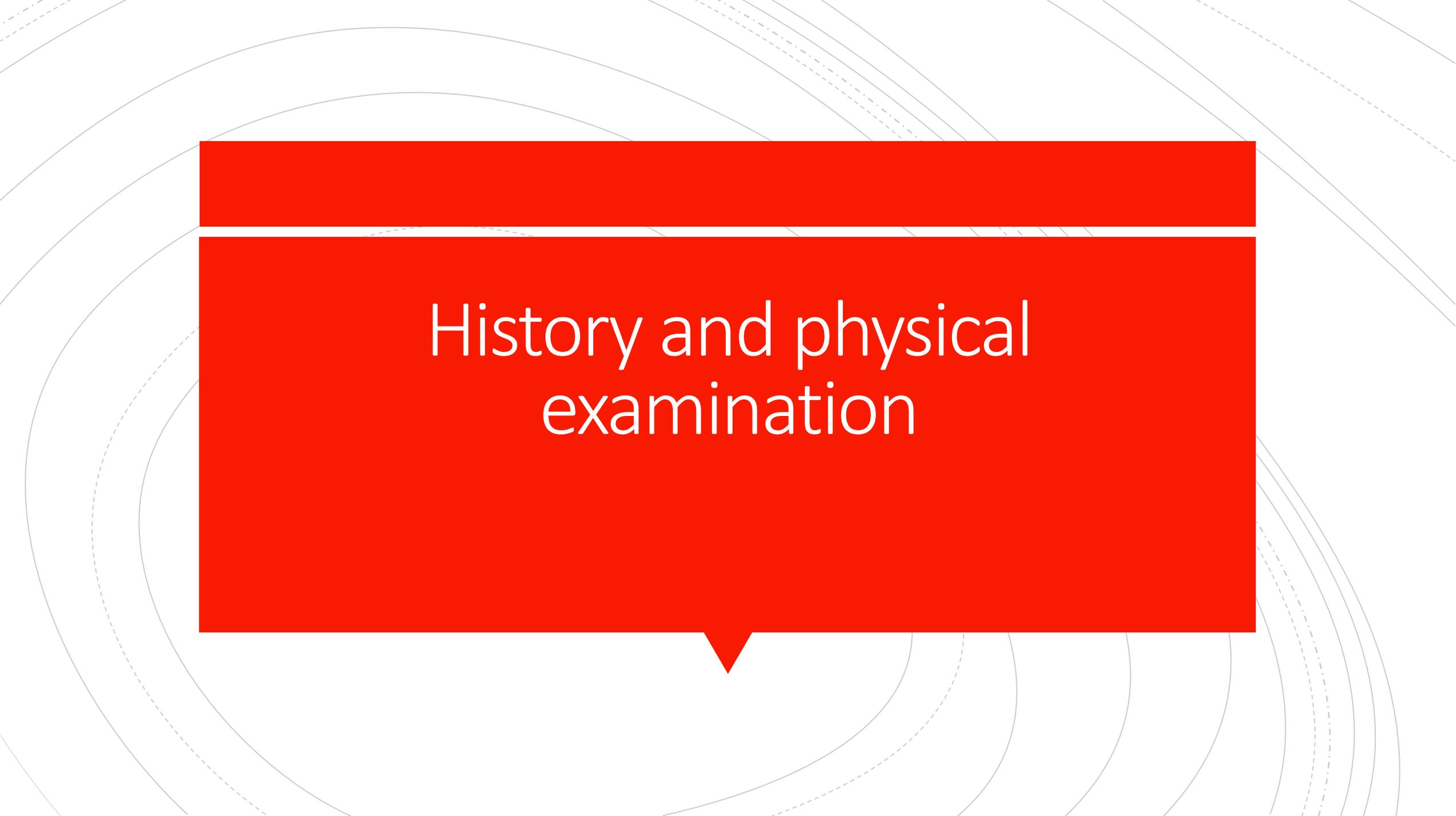
- ***Duodenal causes:***

- Duodenal ulcer
- Vascular malformation including aorto-enteric fistulae
- Hematobilia, or bleeding from the biliary tree
- Bleeding from the pancreatic duct
- Severe superior mesenteric artery syndrome



Evaluation

- The initial evaluation of a patient with a suspected clinically significant acute upper GI bleed includes a history, physical examination, laboratory tests, and in some cases, nasogastric lavage.
- The goal of the evaluation is to assess:
 1. The severity of the bleeding (hemodynamic status)
 2. Identify potential sources of the bleeding
 3. Determine if there are conditions present that may affect subsequent management

The background features a series of concentric circles in light gray, some solid and some dashed, creating a ripple effect. A prominent red callout box is centered on the page, containing the text 'History and physical examination'.

History and physical examination

Presentation of GI bleeding:

- **Hematemesis:** vomiting of blood; either red blood or coffee-ground emesis
 - Suggests UGI bleeding (proximal to the ligament of Treitz)
 - Coffee-ground emesis suggests slower rate of bleeding (digested blood in stomach)
- **Melena:** shiny black, tarry stool with distinctive odor .
 - Suggest UGIB
 - Partially digested blood , it indicates that blood has been presented in the GIT for at least 14 hours.
 - More common in lesions distal to the pylorus.
- **Hematochezia:** passage of red or maroon blood stools from the rectum is usually due to lower GI bleeding.
- However, it can occur with massive upper GI bleeding, which is typically associated with orthostatic hypotension.

History

- ❖ Symptoms that suggest severe bleeding: orthostatic dizziness, confusion, angina, severe palpitation, cold/clammy extremities.
- ❖ Specific causes of upper GI bleeding may be suggested by the patient's symptoms:
 1. **Peptic ulcer:** epigastric pain
 2. **Esophageal ulcer:** Odynophagia, dysphagia, gastroesophageal reflux.
 3. **Mallory-Weiss tear:** Emesis, retching, or coughing prior to hematemesis
 4. **Variceal hemorrhage** or portal hypertensive gastropathy: Jaundice, abdominal distention (ascites)
 5. **Malignancy:** Dysphagia, early satiety, involuntary weight loss, cachexia

Medication history

- Particular attention should be paid to drugs that:
 1. **NSAIDs** as diclofenac and ibuprofen.
 2. **antiplatelet agents** like acetylsalicylic acid (ASS), clopidogrel and prasugrel.
 3. **Anticoagulants** as vitamin-K antagonists, heparin or direct oral anticoagulants (DOAKs).
 4. selective serotonin reuptake inhibitors (**SSRI**)

Note: May alter the clinical presentation, such as **bismuth and iron**, which can turn the stool black.

Past Medical History:

- Patients should be asked about prior episodes of upper GI bleeding, since up to 60 percent of patients with a history of an upper GI bleed are bleeding from the same lesion.
- Potential bleeding sources suggested by a patient's past medical history include:
 1. Varices or portal hypertensive gastropathy in a patient with a history of **liver disease** or **alcohol abuse**.
 2. Aorto-enteric fistula in a patient with a history of an **abdominal aortic aneurysm** or an **aortic graft**.
 3. Angiodysplasia in a patient with **renal disease**, **aortic stenosis**, or **hereditary hemorrhagic telangiectasia**.
 4. Peptic ulcer disease in a patient with a history of **Helicobacter pylori infection**, nonsteroidal anti-inflammatory drug (**NSAIDs**) use, or **smoking**.
 5. **Malignancy** in a patient with a history of smoking, alcohol abuse, or H. pylori infection

Past medical history

- Comorbid illnesses may influence patient management in the setting of an acute upper GI bleed. Comorbid illnesses may:
 1. Make patients more susceptible to adverse effects of **anemia** (eg, **coronary artery disease, pulmonary disease**).
 2. Predispose patients to volume overload in the setting of vigorous fluid resuscitation or blood transfusions (eg, **renal disease, heart failure**).
 3. Result in bleeding that is more difficult to control (eg, **coagulopathies, thrombocytopenia, significant hepatic dysfunction**).
 4. Predispose to aspiration of GI contents into the lungs (eg, **dementia, hepatic encephalopathy**).

Past surgical history:

Any prior surgical or
endoscopic interventions.

Social history:

Alcohol use
smoking

Physical examination

- The physical examination is a key component of the assessment of hemodynamic stability.
- Signs of hypovolemia include:
 1. Resting tachycardia. (less than 15% of blood volume lost)
 2. Orthostatic hypotension.(at least 15% of blood volume lost)
 3. Supine hypotension.(at least 40% of blood volume lost)
- The presence of abdominal pain, especially if severe and associated with rebound tenderness or involuntary guarding, raises concern for perforation.

Laboratory data

- *Laboratory tests that should be obtained in patients with acute upper gastrointestinal bleeding include:*
 - 1. Complete blood count:** *chronic or subacute bleeding leads to anemia but the hemoglobin concentration may be normal after sudden, major bleeding until hemodilution occurs*
 - 2. Serum chemistries and KFTs**
 - 3. LFTs:** *these include PT, INR and serum albumin concentration. They may show evidence of chronic liver disease or anti-coagulated patients*
 - 4. Cross-matching:** *at least two units of blood should be cross-matched.*

Nasogastric lavage

- Whether all patients with suspected acute upper GI bleeding require nasogastric tube (NGT) placement is controversial.
- More often, NGT lavage is used when it is unclear if a patient has ongoing bleeding and thus might benefit from an early endoscopy.
- In addition, NGT lavage can be used to remove particulate matter, fresh blood, and clots from the stomach to facilitate endoscopy.
- The presence of red blood or coffee ground material in the nasogastric aspirate also confirms an upper GI source of bleeding

Diagnostic studies

- **Upper endoscopy** — Upper endoscopy is the diagnostic modality of choice for acute upper GI bleeding.
- Endoscopy has a high sensitivity and specificity for locating and identifying bleeding lesions in the upper GI tract.
- In addition, once a bleeding lesion has been identified, therapeutic endoscopy can achieve acute hemostasis and prevent recurrent bleeding in most patients
- **Risks of endoscopy** — Risks of upper endoscopy include pulmonary aspiration, GI perforation, and increasing bleeding while attempting therapeutic intervention.

Evidence
Supports
Performing Early
Endoscopy

- Early endoscopy within first 24 hrs of acute GIB is associated with:
 1. Decreased hospital stay
 2. Decreased rate recurrent bleeding
 3. Decreased need for surgery
 4. 50% reduction in mortality rates

Diagnostic studies

- Other diagnostic tests — Other diagnostic tests for acute upper GI bleeding include angiography, which can detect active bleeding, deep small bowel enteroscopy, and rarely, intraoperative enteroscopy.
- Upper GI barium studies are **contraindicated** in the setting of acute upper GI bleeding because they will interfere with subsequent endoscopy, angiography, or surgery

Triage

- 1. All patients with hemodynamic instability or active bleeding** (manifested by hematemesis, bright red blood per nasogastric tube, or hematochezia) should be admitted to an **intensive care unit** for resuscitation and close observation with automated blood pressure monitoring, electrocardiographic monitoring, and pulse oximetry.
- 2. Other patients** can be admitted to a **regular medical ward**, though we suggest that all admitted patients with the exception of low-risk patients receive electrocardiographic monitoring.
- 3. Outpatient management** may be appropriate for some **low-risk patients.** Determining the appropriate site of care for a patient can be facilitated using risk stratification scores, such as the Glasgow-Blatchford score. Use of these scores is recommended in the International Consensus Group guideline

Risk stratification

- Two commonly cited scoring systems are the **Rockall** score and the **Blatchford** score
- The **Rockall** score is based upon age, the presence of shock, comorbidity, diagnosis, and endoscopic stigmata of recent hemorrhage
- The **Blatchford score** (also known as the Glasgow Blatchford score), unlike the Rockall score, does not take endoscopic data into account and thus can be used when the patient first presents

Calculation of Rockall Score

High risk score > 5 Low risk score ≤ 5¹

Variable	Score			
	0	1	2	3
Age	<60	60-79	>80	
Shock	No shock SBP≥100 PR<100	Tachycardia SBP≥100 PR≥100	Hypotension SBP≤100	
Co Morbidity	No major Co-morbidity		Cardiac Failure, IHD, any major co-morbidity	Renal failure, liver failure disseminated malignancy
Diagnosis	Mallory-Weiss tear, no lesion identified, no SRH or blood	All other diagnosis	Malignancy of upper GI tract	
Major SRH	None or dark spot		Blood in upper GI tract, adherent clot, visible or spurting vessel	

SBP = systolic blood in mmHg PR = pulse rate

IHD=Ischaemic heart Disease

GI= gastrointestinal

SRH= Stigmata recent Haemorrhage

¹ Church NI, Palmer KR (2001). *Eur J Gastroenterol Hepatol* 13:1149-52.

Blatchford score

- The score is based upon the blood urea nitrogen, hemoglobin, systolic blood pressure, pulse, and the presence of melena, syncope, hepatic disease, and/or cardiac failure.
- The score ranges from zero to 23 and the risk of requiring endoscopic intervention increases with increasing score .
- A simpler version of the score, known as the modified Glasgow Blatchford score, is calculated using only the blood urea nitrogen, hemoglobin, systolic blood pressure, and pulse.

Glasgow-Blatchford Score

Admission risk marker	Score component value
Blood Urea (mmol/dL)^[5]	
6.5-8.0	2
8.0-10.0	3
10.0-25	4
>25	6
Haemoglobin (g/dL) for men	
12.0-12.9	1
10.0-11.9	3
<10.0	6
Haemoglobin (g/dL) for women	
10.0-11.9	1
<10.0	6
Systolic blood pressure (mm Hg)	
100-109	1
90-99	2
<90	3
Other markers	
Pulse \geq 100 (per min)	1
Presentation with melaena	1
Presentation with syncope	2
Hepatic disease	2
Cardiac failure	2

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Initial Management

Hemodynamically Unstable

- First Step – **ABC and Vital Signs** (Give Oxygen to all patients in shock)
- Intravenous Access – 2 large bore peripheral intravenous catheters, Also we should insert Foley catheter to monitor fluid status
- Fluid Resuscitation – Crystalloid fluid should be given (Bolus of normal saline or lactate ringer to correct hypovolemia)
- Transfusion – RBCs transfusion may required despite normal haemoglobin level, particularly if the patient remains hemodynamically unstable after appropriate fluid resuscitation !

- Patients without active bleeding who become hemodynamically stable with fluid resuscitation should receive a blood transfusion if the Hb < 9 g/dl for high risk patients and if Hb level 7 g/dl or lower for low risk patients
- Platelets – Given in the case of Active bleeding with low platelet count (< 50000)
- Fresh Frozen Plasma – Given to the patients with COAGULOPATHY and to those with prolonged prothrombin time (INR > 2)
- INR < 1.5 will be enough to perform upper endoscopy procedure !

Medications :

- 1) Acid suppression – IV PPIs
- 2) Prokinetics medication – Erythromycin and metoclopramide effectively decrease the need for repeat endoscopy by improve gastric visualization
- 3) In the cases of variceal bleeding – Vasoactive medications can be used such as somatostatin and terlipressin !

- Then we are going to do some procedures to identify the cause :
 - 1) Nasogastric Tube Suction – Determine rate and amount of blood
 - 2) Water Lavage – Use warm H₂O to remove clots, and have better view for gastric mucosa and for duodenum
 - 3) Esophagogastroduodenoscopy – Determine etiology, location of bleeding and possible treatment (Ex. Coagulate bleeders)

NICE GUIDELINES :

- 1)** Offer endoscopy to unstable patient with severe acute UGIB immediately after resuscitation !
- 2)** Offer endoscopy within 24 hours of admission to all other patient with UGIB
- 3)** Do not offer acid suppression drugs before endoscopy to patients with suspected non-variceal UGIB

Indications for surgical intervention

- Refractory or recurrent bleeding and site known
- Profuse bleeding (> 3 units PRBCs to stabilize or > 6 units PRBCs overall)
- Coexisting reason for a surgery (Malignancy or perforation)
- if brief hypotensive episode could have catastrophic results in high risk patient
 - (Older than 60 years old, Coronary artery disease or cerebrovascular disease)

- Pathological features of the bleeding site (high risk of recurrent bleeding)
 - posterior duodenal ulcer with gastroduodenal artery visible at base
 - Giant gastric ulcer

Treatment depend
on the cause

- **Non-variceal bleeding**
 - Mechanical method (Ex. Clips) with or without adrenaline
 - Thermal Coagulation with adrenaline
 - Fibrin or Thrombin with adrenaline
- **Do not use adrenaline as monotherapy in non-variceal bleeding**
- **Offer PPI after endoscopy was done !**

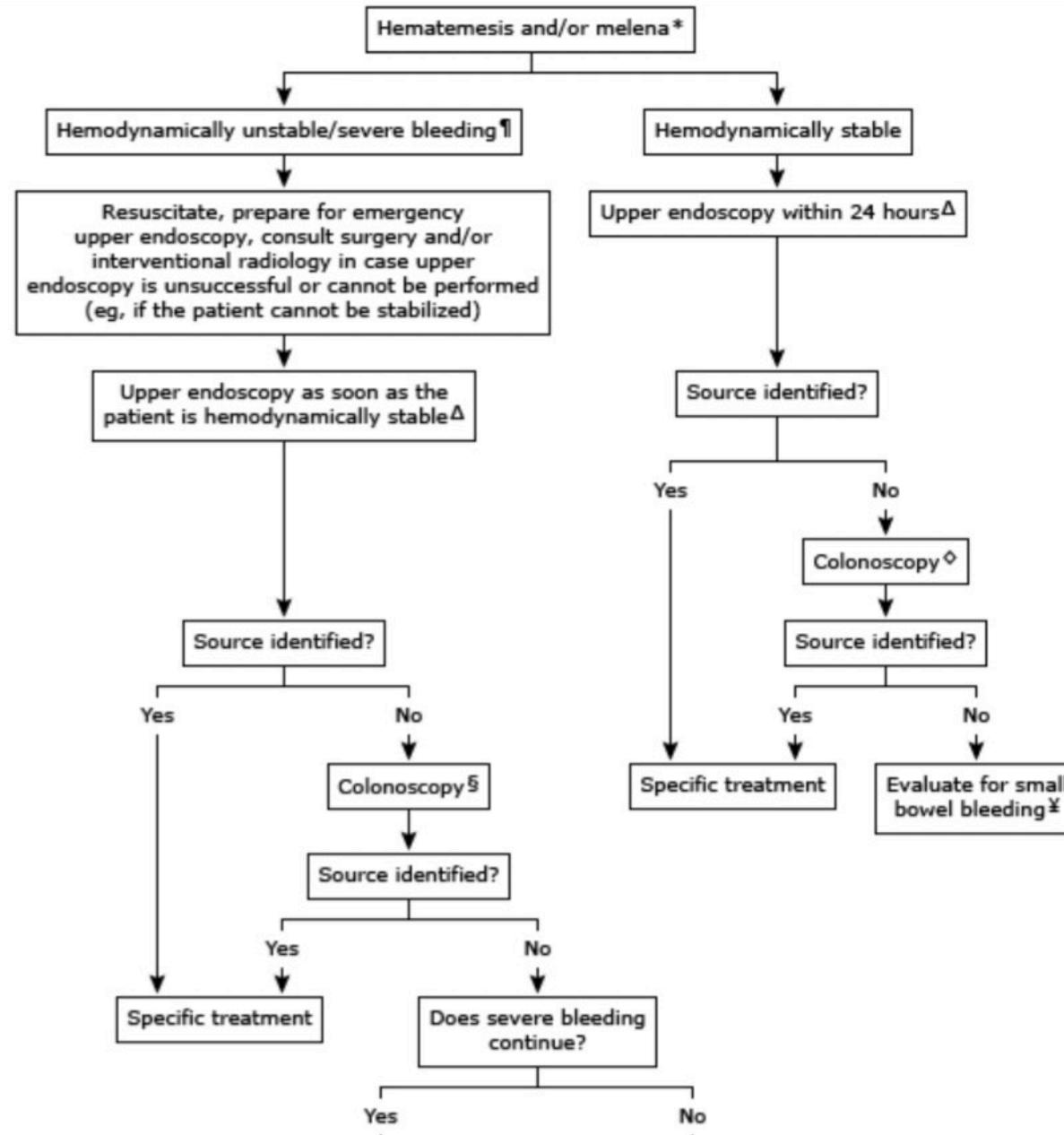
- Variceal Bleeding

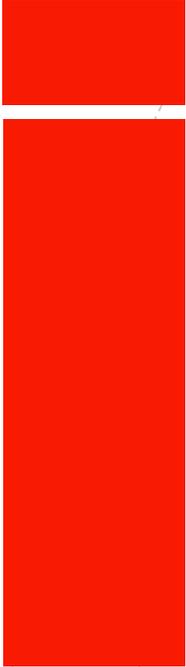
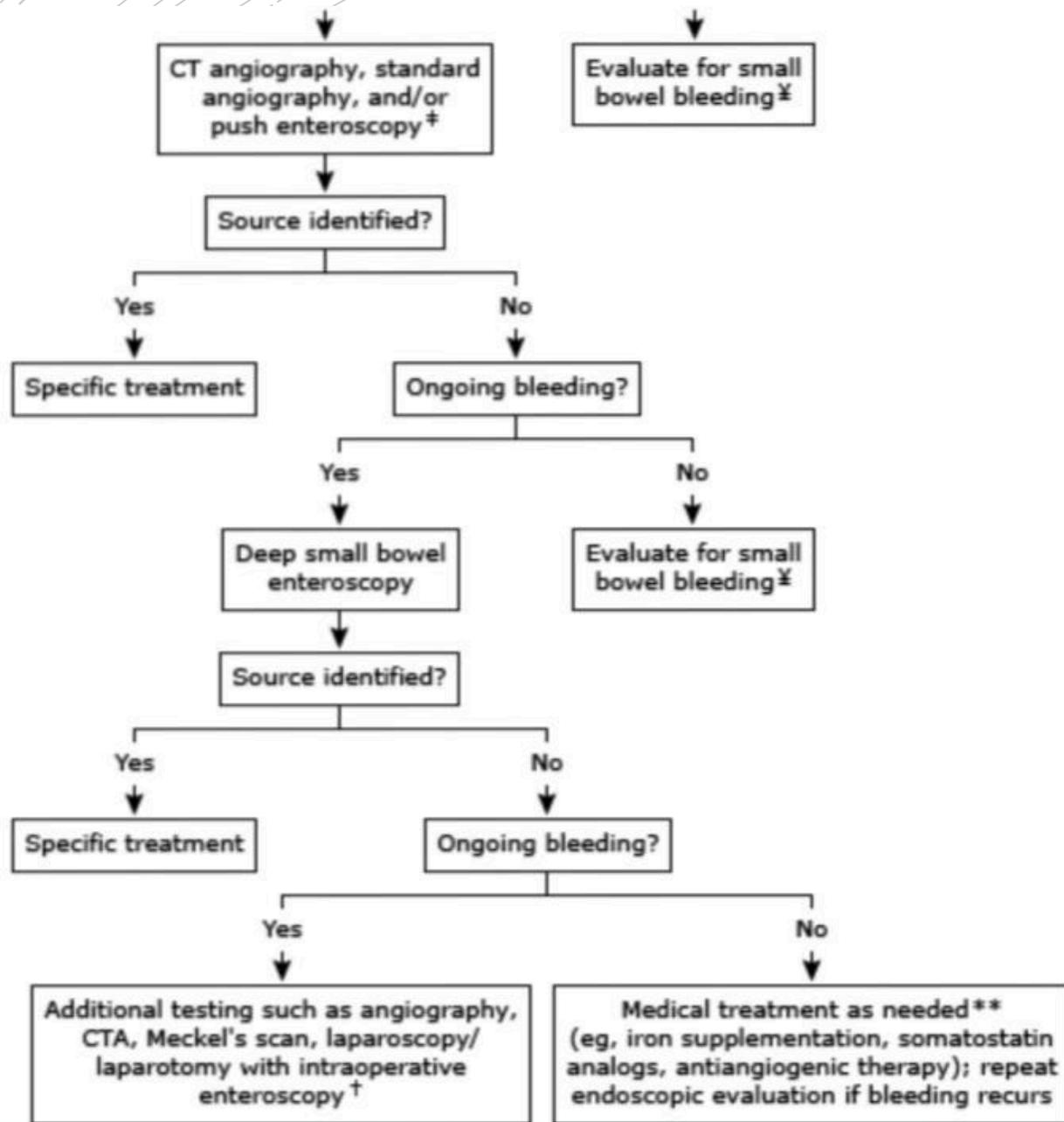
- Offer terlipressin to those patients (Stop it after haemostasis achieved)
- Offer prophylactic antibiotic at presentation

* In the case of oesophageal varices – Use band ligation

* In case of Gastric varices – N-butyl-2-cyanoacrylate endoscopic injection

Evaluation of suspected upper gastrointestinal bleeding





Chronic GI Bleeding

- It is slow, long term minor bleeding or an on/off pattern bleeding
- more difficult to diagnose because the symptoms are not specific
- Mostly patient came with anaemia symptoms
- It can be Occult or Overt (to sever enough to affect circulation)
- Resuscitation and identifying the underlying cause then treat it !

THANK YOU

Done By :

SUHAIB MAHMOUD MAHAJNEH

LINA AYMAN MAANI

BAHA'A ALDEEN NSIRAT

TASNIM AHMAD HUSSIEN