

# Approach to Upper GI Bleed

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# Disclosure

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I have no disclosures

# Objectives

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## Presentation and Prediction of Upper GI Bleed

- Initial Examination
- Predictors
- Non-cirrhotic vs Cirrhosis

## Initial Management

- Medical Management
- Non endoscopic management

# Presentation for Upper GI bleed

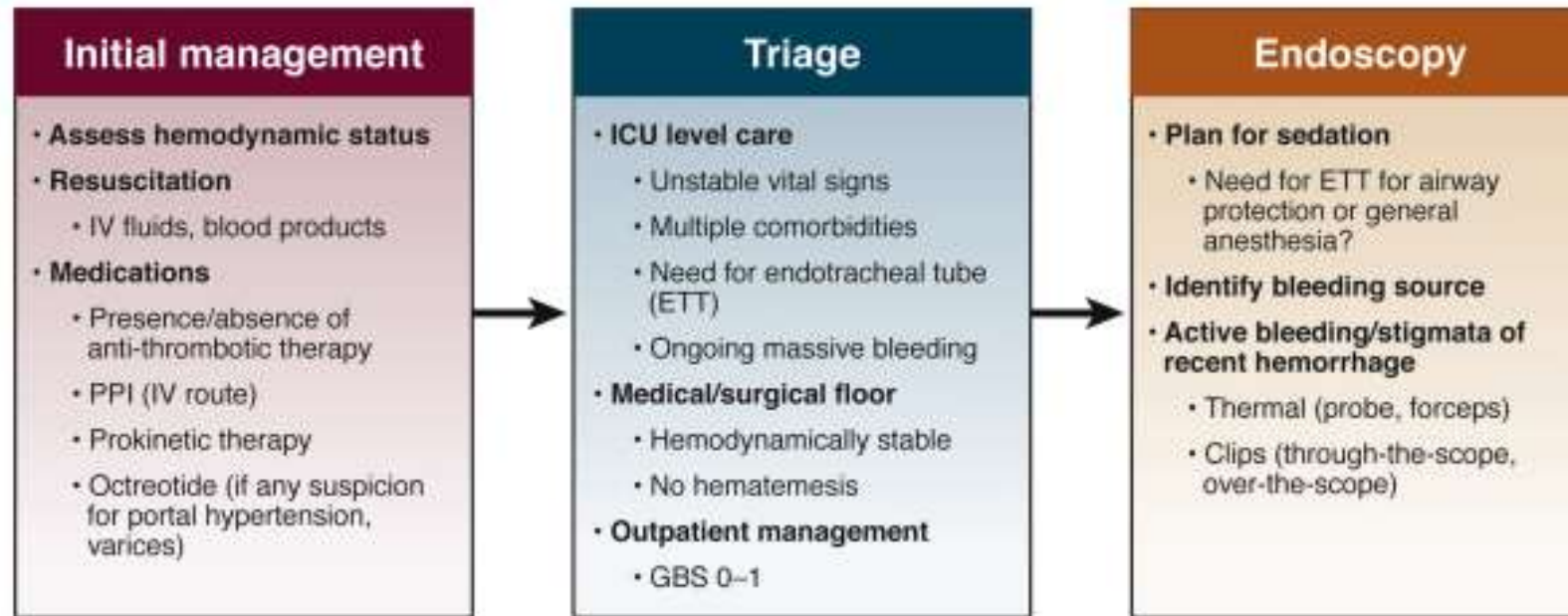
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300,000 admission per year in the US

Mortality 3.5-10%

Suspected if:

- Hematemesis
- Coffee ground emesis
- Melena
- Hematochezia (if severe upper GI source)



# Major causes

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Peptic ulcer

Esophagogastric varices

Arteriovenous malformation

Tumor

Esophageal (Mallory-Weiss) tear

# Examination

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Mild blood loss/hypovolemia (<15%)- tachycardia

Moderate blood loss (15-40%)- orthostatic hypotension

Significant blood loss (>40%)- supine hypotension

# Initial Management

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Best predictive factors to consider for high risk of GI bleed:

- Malignancy history
- Cirrhosis history
- Hypovolemia (tachycardia, hypotension, shock)
- Hematemesis
- History of NSAID/ASA use
- Hemoglobin <8 g/dL



# Predictors of cirrhosis



- Small and nodular liver. Surface nodular
- Collateral veins, decreased portal flow
- Splenomegaly, ascites
- CT/MRI
- Elastography- Measures liver stiffness

eatosis

Labs

# Portal Hypertension-Prognosis of variceal bleed

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Thrombocytopenia is an independent factor for bleeding

Platelet count at a value of 150,000 showed sensitivity of 0.80 (95% CI 0.73 to 0.85) and specificity of 0.68 (95% CI 0.57 to 0.77)

- Platelet count  $<160,000/\text{mm}^3$  (LR 6.3)

Presence of ascites (likelihood ratio [LR] 7.2)

Spider angiomata (LR 4.3)

# Predictive calculator

## Glasgow-Blatchford Bleeding Score

- Uses BUN, Hemoglobin, Systolic blood pressure, pulse, symptoms
- Score of >0 has 99% sensitivity for severe GI bleed
- Score of 0-1 shown to have low risk of bleeding and can be considered for discharge (likelihood ratio 0.02)

**TABLE 2. Blatchford scoring: Admission risk markers and associated score component values**

Admission risk marker	Score component value
<b>Blood urea, mmol/L</b>	
6.5-<8.0	2
8.0-<10.0	3
10.0-<25.0	4
≥25	6
<b>Hemoglobin for men, g/dL</b>	
12.0-<13.0	1
10.0-<12.0	3
<10.0	6
<b>Hemoglobin for women, g/dL</b>	
10.0-<12.0	1
10.0	6
<b>Systolic blood pressure, mm Hg</b>	
100-109	1
90-99	2
<90	3
<b>Other markers</b>	
Pulse ≥100/min	1
Presentation with melena	1
Presentation with syncope	2
Hepatic disease	2
Cardiac failure	2

Adapted with permission from Blatchford O, Murray WR, Blatchford M. A risk score to predict need for treatment for upper-gastrointestinal haemorrhage. Lancet 2000;356:1318-21.<sup>15</sup>

# Initial Resuscitation

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## Fluid Resuscitation

## NG tube placement

- Considered in all upper GI bleed
- 15% of upper GI bleed will have negative NG lavage

## PPI

- No mortality difference for PPI prior to intervention
- Early PPI reduces high-risk stigmata on endoscopy (OR 0.67) and need for intervention (OR 0.68)

## Prokinetics

- Erythromycin or metoclopramide 20-120 minutes prior to intervention to reduce need for repeat endoscopy

## Antibiotics

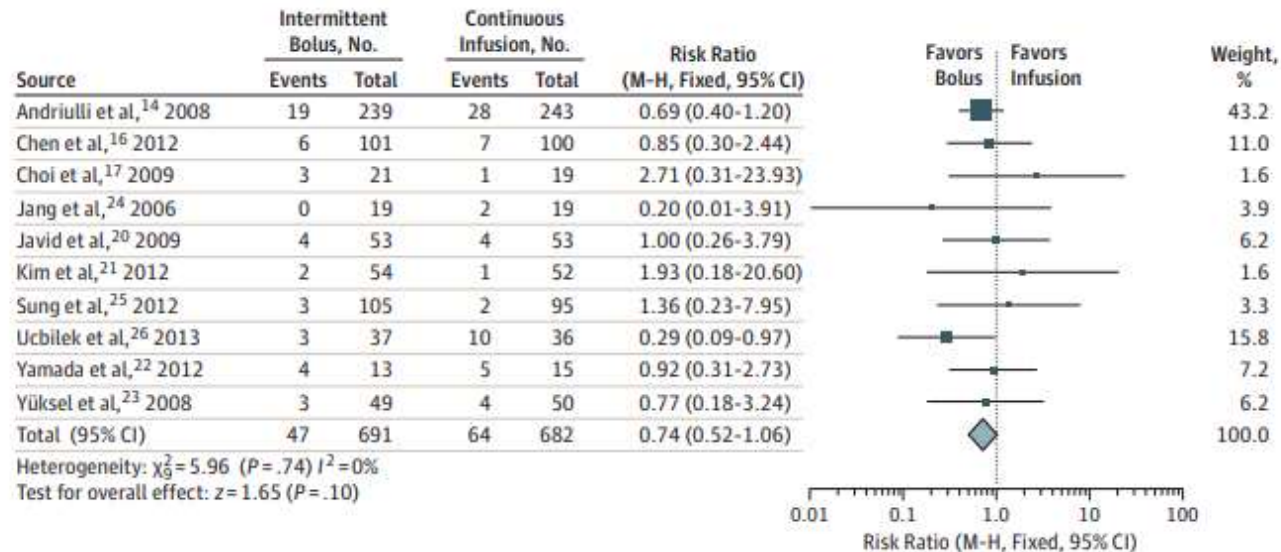
# PPI in GI bleed

Continuous infusion vs intermittent dose

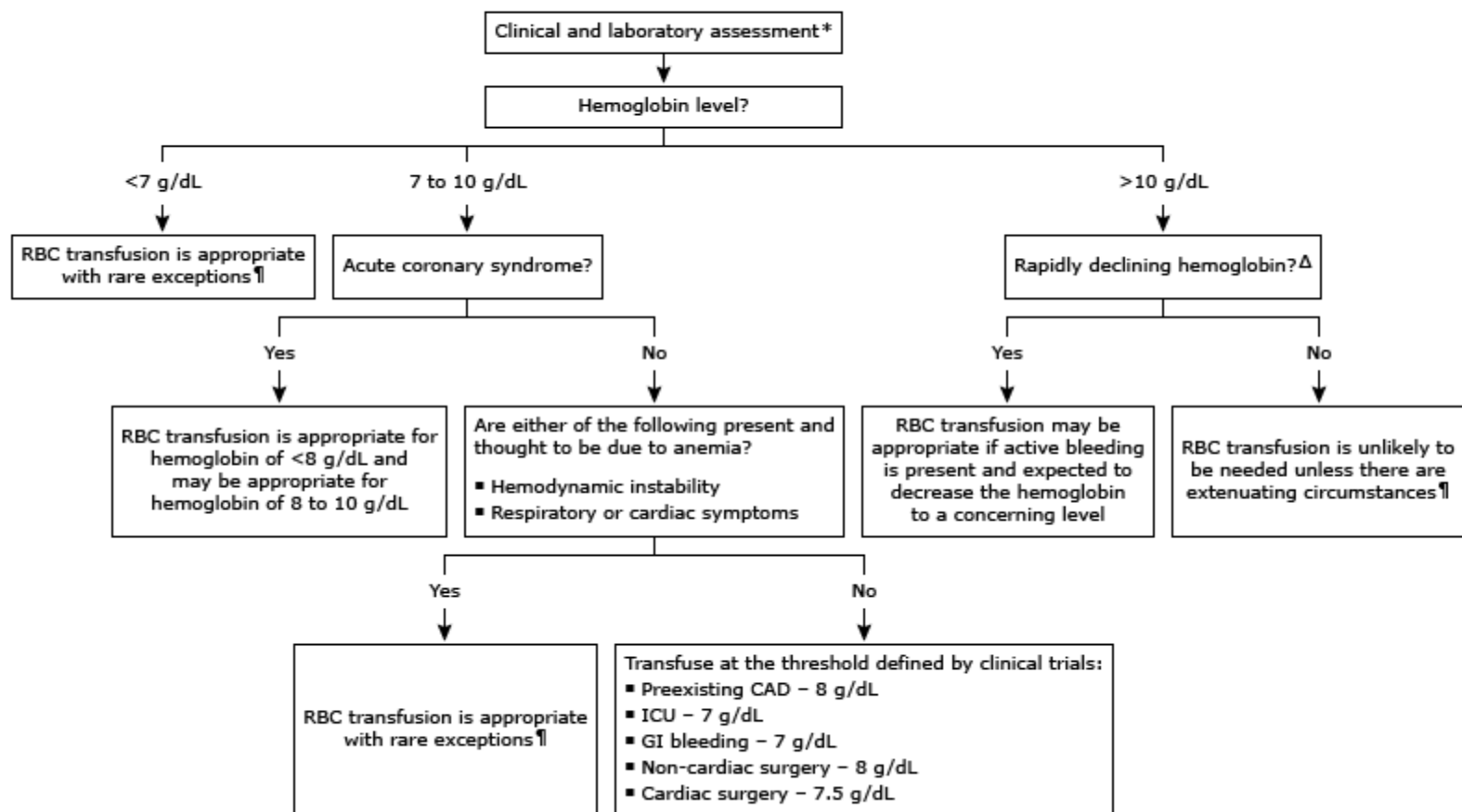
Large meta-analysis of major US and European publications

Non-inferior to use intermittent dosing

- No difference in re-bleed, mortality, urgent intervention or length of hospital stay



## Red blood cell (RBC) transfusion decisions in adults



**Table 3. Outcomes in randomized trials of restrictive vs liberal transfusion strategy**

	Villaneuva et al. (14)		Jairath et al. (15) <sup>a</sup>	
	Restrictive strategy (N = 444)	Liberal strategy (N = 445)	Restrictive strategy (N = 257)	Liberal strategy (N = 383)
Hemoglobin threshold (g/dL)	7	9	8	10
Further bleeding, n (%)	45 (10.1)	71 (16.0)	13 (5.1)	31 (8.1)
Relative effect size (95% CI)	Adjusted HR = 0.68 (0.47-0.98)		RR = 0.62 (0.33-1.17)	
Absolute effect size (95% CI)	Difference = -6% (-10% to -1%)		Difference = -3% (-7% to 1%)	
Mortality, n (%)	23 (5.2)	41 (9.2)	14 (5.4)	25 (6.5)
Relative effect size (95% CI)	Adjusted HR = 0.55 (0.33-0.92)		RR = 0.83 (0.44-1.57)	
Absolute effect size (95% CI)	Difference = -4% (-7% to -1%)		Difference = -1% (-5% to 3%)	

CI, confidence interval; HR, hazard ratio; RR, risk ratio.  
<sup>a</sup>Cluster randomized trial in which participating sites rather than individual patients were randomly assigned to a study arm.

# Blood Products

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Platelets- consider if below 50,000 or if falling

- If receive more than 8 units pRBC, monitor platelets due to dilution effect

Hemostatic products

- Uncertainty to role/benefit of products
- Question regarding benefit of prothrombotic agents
  - Recombinant factor VII
  - Prothrombin complex concentrates
  - Fibrinogen



# Variceal Bleed

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Cautious blood products and crystalloid administration

- Hemoglobin 7-8 g/dL
- Increase perfusion can worsen portal pressure leading to further rebleeding

Transfusion Fresh Frozen Plasma and/or Platelets

Antibiotics for 7 days to decrease risk of bacterial infection

Octreotide 50- $\mu$ g IV bolus followed by a 50-mg/h infusion

Intubation strongly considered to avoid aspiration

**Urgent upper endoscopy recommended (vs TIPS)**

# Early Endoscopy

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Recommended within 12 hours for variceal bleed

Conflicting data for non variceal bleeding

- Data showing urgent endoscopy (within 12 hours) associated with poor outcomes

**Table 6.** Randomized trial of endoscopy <6 hours vs 6–24 hours after gastroenterology consultation in patients with hematemesis or melena and Glasgow-Blatchford score  $\geq 12$  (53)

Outcome	Endoscopy <6 hr (N = 258)	Endoscopy 6–24 hr (N = 258)
Hours from presentation to endoscopy, mean $\pm$ SD	9.9 $\pm$ 6.1	24.7 $\pm$ 9.0
Further bleeding (30 d), n (%)	28 (10.9)	20 (7.8)
Death (30 d), n (%)	23 (8.9)	17 (6.6)
Hospital days, median (range)	5 (4–9)	5 (3–8)
Units of blood transfused, mean $\pm$ SD	2.4 $\pm$ 2.3	2.4 $\pm$ 2.1
Endoscopic therapy, n (%)	155 (60.1) <sup>a</sup>	125 (48.4)

<sup>a</sup>*P* = 0.01 vs endoscopy 6–24 hours.

# Alternatives to EGD

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Vasoactive medications to decrease portal blood flow

- Octreotide

Balloon tamponade

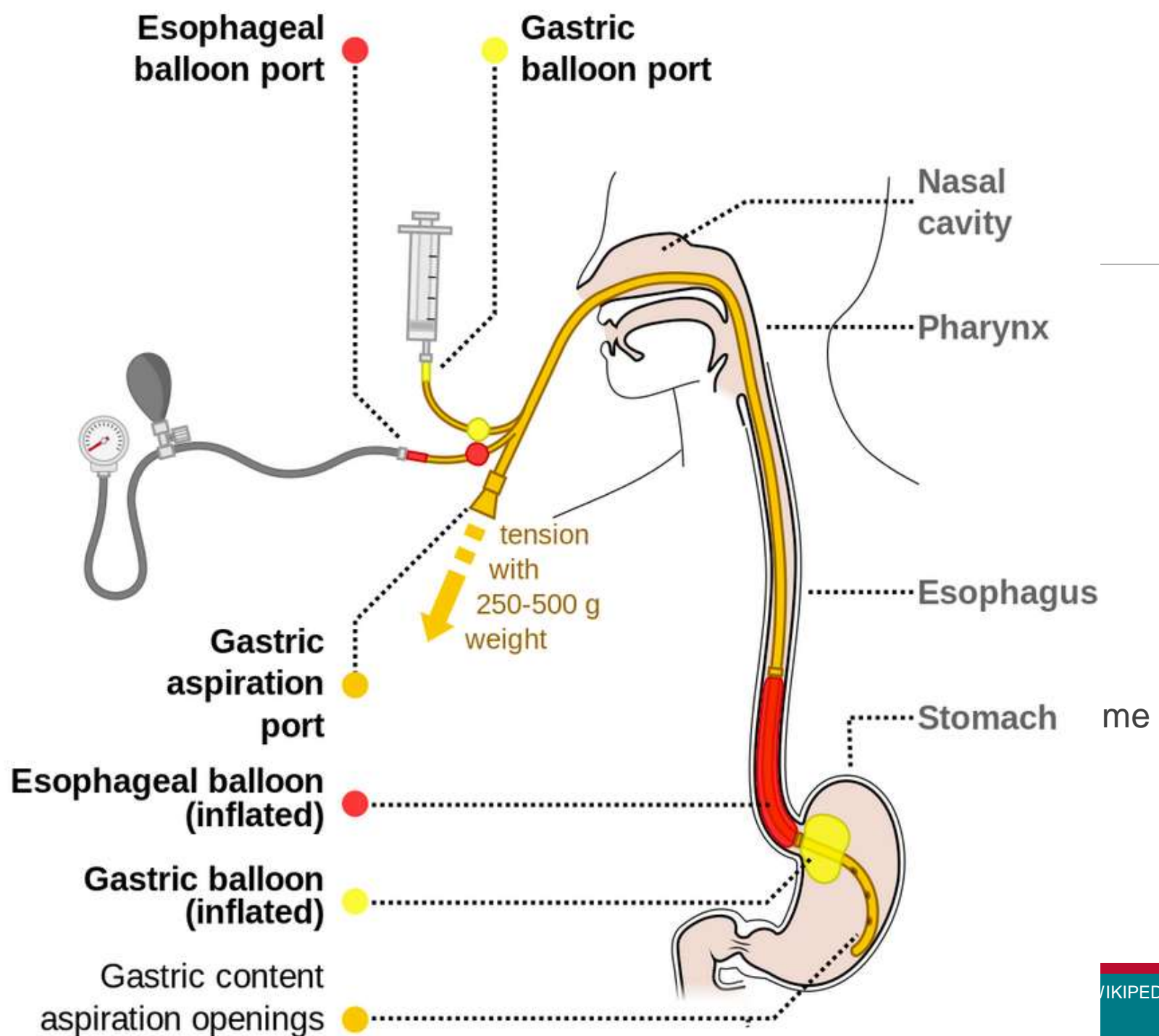
Transjugular intrahepatic portosystemic shunting (TIPS)

Surgery

# Non En

## Balloon tamponade

- Intubated prior to
- Equipment needed
  - Tube kit
  - Large-volume syringe
  - Traction system (helix)
  - Suction
- Place under left-
- Insert balloon to
- Inflate balloon to
- Apply traction to
- If bleeding continues



# Citation

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Laine, Loren, et al. "ACG clinical guideline: upper gastrointestinal and ulcer bleeding." *Official journal of the American College of Gastroenterology| ACG* 116.5 (2021): 899-917.

Mullady, Daniel K., Andrew Y. Wang, and Kevin A. Waschke. "AGA clinical practice update on endoscopic therapies for non-variceal upper gastrointestinal bleeding: expert review." *Gastroenterology* 159.3 (2020): 1120-1128.

Hwang, Joo Ha, et al. "The role of endoscopy in the management of acute non-variceal upper GI bleeding." *Gastrointestinal endoscopy* 75.6 (2012): 1132-1138.

# Questions

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