GASTROINTESTINAL TRACT BLEEDING

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GASTROINTESTINAL BLEEDING:

1. UPPER GI TRACT BLEEDING:
   - HEMATEMESIS
   - MELENA
   - HAEMATOCHOEZIA

2. LOWER GI TRACT BLEEDING:
   - HAEMATOCHOEZIA
   - MELENA

3. OCCULT BLEEDING (UNKNOWN TO THE PATIENTS)

4. OBSCURE (UNKNOWN SITE IN THE GI TRACT BLEEDING)
Upper GI Tract Bleeding

- HEMATEMESIS
- MELENA
- HEMATOCH EZIA TRANSIT TIME <<

LIGAMENTUM TRAITZ

Lower GI Tract Bleeding

- HEMATOCHEZIA
- MELENA ← TRANSIT TIME >>

- 80% Self Limited

- Incidence Of Upper GI Tract Bleeding: 36 – 102 / 100,000 Population (USA)

- Incidence Of Lower GI Tract Bleeding: 20 / 100,000 Population (USA)

- MORTALITY RATE: 10-15 %
WHAT IS ........??

HEMATEMESIS:
Is the vomiting of blood (fresh blood). Bleeding may be from esophagus, the stomach or duodenum.

MELENA:
Is the passage of black, tarry stool containing digested blood, at least 60 ml blood loss.

HAEMATOCHEZIA:
Is the passage of blood with characteristic bright red or blood mixed with formed stool.

OCCULT BLEEDING:
Macroscopic: Normal stool & benzidine test (+)
CAUSES OF ACUTE UPPER GASTROINTESTINAL BLEEDING

COMMON CAUSES
- GASTRIC ULCER
- DUODENAL ULCER
- ESOPHAGEAL VARICES
- MALLORY - WEISS TEAR

LESS – FREQUENT CAUSES
- DIEULAFOY’S LESIONS
- VASCULAR ECTASIA
- PORTAL HYPERTENSIVE GASTROPATHY
- GASTRIC ANTRAL VASCULAR ECTASIA (WATERMELON STOMACH)
- GASTRIC VARICES
- NEOPLASIA
- ESOPHAGITIS
- GASTRIC EROSIONS
CAUSES OF ACUTE UPPER GASTROINTESTINAL BLEEDING

RARE CAUSES

- ESOPHAGEAL ULCER
- EROSSIVE DUODENITIS
- AORTOENTERIC FISTULA
- HEMOBILIA
- PANCREATIC SOURCE
- CRONH’S DISEASE
- NO LESION IDENTIFIED
Figure 1—Etiology of upper GI bleeding.
CAUSES OF ACUTE LOWER GASTROINTESTINAL BLEEDING

COMMON CAUSES
- DIVERTICULA
- VASCULAR ECTASIA
- ESOPHAGEAL VARICES
- MALLORY - WEISS TEAR

UNCOMMON CAUSES
- NEOPLASIA (INCLUDING POSTPOLYPECTOMY)
- INFLAMMATORY BOWEL DISEASE
- COLITIS
  - ISCHEMIC
  - RADIATION
  - UNSPECIFIC
- HEMORRHOIDS
- SMALL BOWEL SOURCE
- UPPER GASTROINTESTINAL SOURCE
- NO LESION IDENTIFIED
CAUSES OF ACUTE LOWER GASTROINTESTINAL BLEEDING

RARE CAUSES

- DIEULAFOY’S LESIONS
- COLONIC ULCERATIONS
- RECTAL VARICES
Figure 5—Etiology of lower GI bleeding.
<table>
<thead>
<tr>
<th>Hemorrhagic Class</th>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blood Loss</td>
<td>15% OR 750 ML</td>
<td>20-25% OR 1000-1250 ML</td>
<td>30-35% OR 1500-1800 ML</td>
<td>40-50% OR 2000-2500 ML</td>
</tr>
<tr>
<td>Heart Rate</td>
<td>&lt;100</td>
<td>&gt;100</td>
<td>&gt;120</td>
<td>&gt;140</td>
</tr>
<tr>
<td>Respiratory Rate</td>
<td>14-19</td>
<td>20-29</td>
<td>30-40</td>
<td>&gt;40</td>
</tr>
<tr>
<td>Arterial Pressure</td>
<td>NORMAL</td>
<td>110-80</td>
<td>70-60</td>
<td>&lt;60</td>
</tr>
<tr>
<td>Capillary Filling Time</td>
<td>NORMAL</td>
<td>INCREASED</td>
<td>INCREASED</td>
<td>INCREASED</td>
</tr>
<tr>
<td>Diuresis (ML/H)</td>
<td>35-30</td>
<td>30-25</td>
<td>25-5</td>
<td>0</td>
</tr>
<tr>
<td>Neurologic Status</td>
<td>MILDLY ANXIOUS</td>
<td>VERY ANXIOUS</td>
<td>CONFUSED</td>
<td>LETHARGIC</td>
</tr>
</tbody>
</table>
## HEMATEMESIS AND MELENA

<table>
<thead>
<tr>
<th>V</th>
<th>I</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Vascular</strong></td>
<td><strong>Inflammatory</strong></td>
<td><strong>Neoplasm</strong></td>
</tr>
<tr>
<td>Esophagus</td>
<td>Esophageal varices</td>
<td>Reflux esophagitis</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ulcer</td>
</tr>
<tr>
<td>Aortic aneurysm</td>
<td>Trypanosomiasis cruzi</td>
<td></td>
</tr>
<tr>
<td>Stomach</td>
<td>Cardiac varices</td>
<td>Gastritis</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ulcer</td>
</tr>
<tr>
<td></td>
<td>Ruptured aneurysm</td>
<td>Gastric ulcer</td>
</tr>
<tr>
<td>Duodenum</td>
<td></td>
<td>Ulcer</td>
</tr>
<tr>
<td>Pancreas</td>
<td></td>
<td>Acute pancreatitis (hemorrhagic)</td>
</tr>
<tr>
<td>Blood</td>
<td></td>
<td></td>
</tr>
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<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
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<td>I</td>
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<tr>
<td>------------------</td>
<td>------------------------------------------</td>
<td>-------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>Degenerative and Deficiency</td>
<td>Intoxication</td>
</tr>
<tr>
<td>Esophagus</td>
<td></td>
<td>Lye and other irritants</td>
</tr>
<tr>
<td>Stomach</td>
<td>Atrophic gastritis</td>
<td>Alcoholic gastritis, aspirin, and other drugs (e.g., arsenic)</td>
</tr>
<tr>
<td>Duodenum</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pancreas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blood</td>
<td>Aplastic anemia</td>
<td>Warfarin</td>
</tr>
<tr>
<td></td>
<td>Vitamin K deficiency</td>
<td>Heparin</td>
</tr>
<tr>
<td></td>
<td>A</td>
<td>T</td>
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<tr>
<td>------------------</td>
<td>--------------------------------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td><strong>Autoimmune</strong></td>
<td><strong>Allergic</strong></td>
<td><strong>Trauma</strong></td>
</tr>
<tr>
<td>Esophagus</td>
<td>Scleroderma</td>
<td>Foreign body</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nasogastric tube</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mallory–Weiss syndrome</td>
</tr>
<tr>
<td>Stomach</td>
<td></td>
<td>Perforation and laceration</td>
</tr>
<tr>
<td></td>
<td></td>
<td>surgery</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Duodenum</td>
<td>Regional ileitis</td>
<td>Perforation and laceration</td>
</tr>
<tr>
<td></td>
<td></td>
<td>surgery</td>
</tr>
<tr>
<td>Pancreas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blood</td>
<td>ITP</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Collagen disease and other</td>
<td></td>
</tr>
<tr>
<td></td>
<td>causes of thrombocytopenia</td>
<td></td>
</tr>
</tbody>
</table>
Comparing melena to hematochezia

With GI bleeding, the site, amount, and rate of blood flow through the GI tract determine if a patient will develop melena (black, tarry stools) or hematochezia (bright red, bloody stools). Usually, melena indicates *upper* GI bleeding, and hematochezia indicates *lower* GI bleeding. However, with some disorders, melena may alternate with hematochezia. This chart helps differentiate these two commonly related signs.

<table>
<thead>
<tr>
<th>SIGN</th>
<th>SITES</th>
<th>CHARACTERISTICS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Melena</strong></td>
<td>Esophagus, stomach, duodenum; rarely, jejunum, ileum, ascending colon</td>
<td>Black, loose, tarry stools; delayed or minimal passage of blood through GI tract</td>
</tr>
<tr>
<td><strong>Hematochezia</strong></td>
<td>Usually distal to or affecting the colon; rapid hemorrhage of 1 L or more associated with esophageal, stomach, or duodenal bleeding</td>
<td>Bright red or dark, mahogany-colored stools; pure blood; blood mixed with formed stool; or bloody diarrhea; reflects lower GI bleeding or rapid blood loss and passage of undigested blood through GI tract</td>
</tr>
</tbody>
</table>
1. GI TRACT BLEEDING (HISTORY)

- VOMITING → MALLORY – WEISS TEAR?
- HEARTBURN & REGURGITATION → REFLUX ESOFAGITIS?
- DYSFAGIA & BW ↓ → MALIGNANCY?
- DRUGS & ALCOHOL → GASTRIC EROSIIVE?
  - PEPTIC ULCER?
- CHRONIC LIVER DISEASE → VARICES BLEEDING?
- SERIOUS ILLNESS (ICU/ ICCU) → STRESS ULCER?
HISTORY

- HAEMATOCHEZIA, KOSNTIPASI & ABDOMINAL PAIN → DIVERTICULITIS
- HAEMATOCHEZIA PER RECTAL → HAEMMOROID
- HAEMATOCHEZIA (+) AND CHRONIC DIARE → IBD
- HAEMATOCHEZIA (+) AGE > 40 YEARS & BW↓ & CHRONIC DIARE → MALIGNANCY
- HAEMATOCHEZIA (+) & POST RADIATION → RADIATION COLITIS
2. INVESTIGATION:
- Haemodinamic status
- Jaundice & Chronic Liver Disease & Portal Hypertensi
- Bleeding Diathesis: Purpura, Echimosis, Ptichiae

3. IMAGING (RADIOLOGIC)
- Upper & Lower Abdominal Scanning

4. ENDOSCOPY
- Gastroduodenoscopy
- Sigmoidoscopy
- Colonoscopy
- Push Enteroscopy
Patient with upper GI bleeding

- Check vital signs, CBC and platelet counts, PT/PTT
- Type and crossmatch blood
- Obtain IV access and perform nasogastric lavage

Hemodynamically unstable or in shock

- Admit to ICU
- Immediate GI and surgical consultation
- Start IV fluids and administer blood products

Hemodynamically stable

- Admit to hospital
- GI consultation
- Start IV fluids

Stable upper GI hemorrhage

Massive upper GI hemorrhage

- Endoscopy within 24 hours
- Start IV PPIs*

Upper endoscopy within 6-12 hours

Variceal bleeding
- Start octreotide and antibiotic therapy
- Band ligation or sclerotherapy
- Evaluate for TIPS if bleeding continues

Nonvariceal bleeding
- Start IV PPIs*
- Perform endoscopic coagulation and injection of vessels

Variceal bleeding
- Start octreotide and antibiotic therapy
- Band ligation or sclerotherapy
- Evaluate for TIPS if bleeding continues

Nonvariceal bleeding
- Perform endoscopic coagulation and injection of vessels

*Off-label use, but a widely accepted practice.

CBC = complete blood cell; GI = gastrointestinal; ICU = intensive care unit; IV = intravenous; PPI = proton pump inhibitor; PT/PTT = prothrombin time/partial thromboplastin time; TIPS = transjugular intrahepatic portosystemic stent shunt.

Figure 4—The management of a patient with acute upper GI bleeding.
Figure 6—Management of a patient with acute lower GI bleeding.

CBC = complete blood cell; GI = gastrointestinal; ICU = intensive care unit; IV = intravenous; PE = push enteroscopy; PEG = polyethylene glycol; PT/PTT = prothrombin time/partial thromboplastin time; RBC = red blood cell.
IRON DEFICIENCY ANEMIA AND/OR FECAL OCCULT BLOOD

SYMPTOMS

Site – Specified Investigation EGD or Colonoscopy (if first negative pursue other)

- (and persistent symptoms)

Consider Small Bowel Investigation

- Re-evaluate dx of anemia, Consider re-evaluation

Colonoscopy in negative EGD

- Trial of iron therapy if iron deficient

(and remains asymptomatic)

Consider other diagnostic tests

(computed tomography and/or Meckel’s scan and/or angiogram)

No response
OBSCURE BLEEDING

Active Bleeding

± RBC scintigraphy ± angiography

Repeat endoscopy (upper endoscopy and/or colonoscopy)

Enteroscopy

Computed tomography and/or Meckel’s scan and/or provocative angiography

Consider Intraoperative Enteroscopy Consider repeating test
TREATMENT

RESUSCITATION (GENERAL)

- VASCULAR ACCESS
- INTRAVENOUS FLUIDS
- BLOOD TESTS
- TYPING & CROSS MATCHING
- CORRECT COAGULOPATHY
- BLOOD TRANSFUSION
VARISES BLEEDING

◊ MEDICAMENT:
  ◊ PREVENTION BETABLOKER (PROPRANOLOL)
  ◊ TERAPEUTIK: SOMATOSTATIN

◊ SB TUBE

◊ ENSOCOPIC → ERADICATION
  ◊ SCLEROTHERAPY
  ◊ BINDING LIGATION

◊ TIPSS
ULCER BLEEDING

1. MEDIKAMENT : ARH2, PPI, Antasida
2. ENDOSCOPIC Therapeutic :
   → laser
   → electrocoagulation
   → heater probe
   → topical sprays
   → injection therapy (adrenalin 1:10,000, alcohol & polidocanol )

3. RADIOLOGIC Therapy : embolisation
4. Prophylactic therapy :
   * eradication HP (Peptic ulcer )
   * empirical therapy
   * Prostaglandin Analog (misoprostol)
   * Surgery for recurrent bleeding
<table>
<thead>
<tr>
<th>TOPICAL THERAPY</th>
<th>MECHANICAL THERAPY</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Tissue adhesives</td>
<td>- Snares</td>
</tr>
<tr>
<td>- Clotting factors</td>
<td>- Sutures</td>
</tr>
<tr>
<td>- Collagen</td>
<td>- Balloons</td>
</tr>
<tr>
<td>- Ferromagnetic tamponade</td>
<td>- Hemoclips</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>INJECTION THERAPY</th>
<th>THERMAL THERAPY</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Variceal bleeding</td>
<td>- Electrocoagulation</td>
</tr>
<tr>
<td>- Non variceal bleeding</td>
<td>- monopoloar</td>
</tr>
<tr>
<td>- Ethanol</td>
<td>- electrohydrothermal</td>
</tr>
<tr>
<td>- Other sclerosants</td>
<td>bipolar (multipolar)</td>
</tr>
<tr>
<td></td>
<td>- Heater probe</td>
</tr>
<tr>
<td></td>
<td>- Laser</td>
</tr>
</tbody>
</table>
# Differential Diagnostic of Occult Gastrointestinal Bleeding

1. **Mass Lesions**
   - Carcinoma (any site) Large (1.5 cm) adenoma (any site)

2. **Inflammation**
   - Erosive esophagitis
   - Ulcer (any site)
   - Cameron lesions
   - Erosive gastritis
   - Celiac sprue
   - Ulcerative colitis
   - Crohn’s disease
   - Colitis (nonspecific)
   - Indiopathic cecal ulcer
1. **Etiology.** The cause of bleeding is the most important determinant of prognosis. Patients with bleeding from esophageal or gastric varices have much higher rates of rebleeding (24%) and mortality (22%) than those with bleeding from other etiologies.

2. **Severity of initial bleed.** Indicators of severe bleeding or a high risk of continued bleeding include hemodynamic instability at time of presentation, repeated red hematemesis or hematochezia, and failure of the gastric aspirate to clear with lavage. Patients with a bloody nasogastric aspirate are about 3 to 4.5 times more likely to have a high-risk lesion than those with a clear aspirate.

3. **Age.** Patients older than 60 years are at increased risk of death. In a study of more than 3000 patients with upper GI bleeding, 73% of deaths occurred in patients older than 60 years.

4. **Comorbid diseases.** Upper GI bleeding concomitant to chronic diseases, such as coronary artery disease, chronic renal insufficiency, chronic obstructive pulmonary disease, or chronic liver disease, is associated with increased mortality risk.
5. **Ulcer size.** The mortality rate in patients with ulcers larger than 2 cm is as high as 40%.

6. **Events in the hospital.** Bleeding during hospitalization is associated with an approximate 10% rate of mortality.

7. **Endoscopy** can predict the risk of rebleeding in a patient with nonvariceal upper GI bleeding. Endoscopic prognostic factors are listed in the Table. Evidence suggests that patients with low-risk lesions on endoscopy can be treated safely—and obviously less expensively—as outpatients.

8. **The key** to triaging patients with upper GI bleeding is to obtain an early endoscopy to determine an accurate prognosis and hence the need for hospital admission.
### Table

**Poor endoscopic prognostic factors in patients with nonvariceal upper gastrointestinal bleeding**

<table>
<thead>
<tr>
<th>Endoscopic stigmata</th>
<th>Prevalence</th>
<th>Risk of rebleeding without therapy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active arterial spurting</td>
<td>15%</td>
<td>&gt;90%</td>
</tr>
<tr>
<td>Visible vessel (nonbleeding)</td>
<td>25%</td>
<td>50%</td>
</tr>
<tr>
<td>Adherent clot</td>
<td>10%</td>
<td>30%-35%</td>
</tr>
<tr>
<td>Oozing without visible vessel</td>
<td>15%</td>
<td>10%-27%</td>
</tr>
<tr>
<td>Flat spots</td>
<td>10%</td>
<td>&lt;8%</td>
</tr>
<tr>
<td>Clean ulcer base</td>
<td>25%</td>
<td>&lt;3%</td>
</tr>
</tbody>
</table>

THANK YOU