Upper GI bleeding

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**Case** - you are a JMO on the ward seeing a 73 year old male admitted with a neck of femur fracture who is now 2 days post-repair. You get a call from the nursing staff that the patient has had some haematemesis. Nursing staff also report the patient had some nausea and a history of some black stools.

1. **Initial questions over the phone**
   - Observations especially HR and BP - important to ascertain how unstable the patient is
   - Need to review patient immediately as upper GI bleeding is a medical emergency

2. **General approach at bedside**
   - **Airway, breathing and circulation**
     - Assess whether they are tachycardic or hypotensive
   - **History looking for causes and consequences of upper GI bleed**
     - History of past upper GI bleeding?
     - Medical history especially peptic ulcer disease, liver disease (?variceal bleed)
     - Medications especially NSAIDS in elderly population, anticoagulants, antiplatelet agents
     - Symptoms of anaemia (SOB, lethargy, palpitations)
     - History of this haematemesis episode to try and localise the source of GI bleed into upper vs lower GI bleed to guide investigation e.g. was haematemesis bright red blood? Was the stool 'jet black'? Any PR bleeding (suggesting large volume bleed from duodenal ulcer or variceal bleed)?
     - **NB: need to ingest 50-100mL blood to develop melaena, 500-1000mL blood to get red PR bleeding from an upper GI bleed.**
   - **Examination**
     - Tachycardia: studies have shown the risk of massive upper GI bleeding is increased in patients with tachycardia even in absence of hypotension. Evidence of tachycardia may suggest the need for resuscitation and early senior assistance
     - Blood pressure especially postural blood pressure, to assess how volume deplete the patient is. A significant postural drop (>30mmHg systolic BP) suggests the need to resuscitate the patient
     - Evidence of liver disease e.g. spider nevi, leukonychia, gynaecomastia
     - Evidence of portal hypertension e.g. splenomegaly, ascites. Presence of portal hypertension increases risk of variceal bleeding (more serious)
     - PR examination to try and localise source of GI bleeding especially if history of PR bleeding/melaena are not clear. Finding melaena (jet black stools) helps confirm the diagnosis.

3. **Resuscitation**
   - Patients with GI bleeding are often under-resuscitated
• Large bore IV access x 2 (16G)
• Give whatever resuscitation fluid is initially available (e.g. normal saline)
• Think about blood products after starting fluid resuscitation
• The sooner a patient is resuscitated the sooner he/she can undergo endoscopy

4. Investigations
• Send off bloods
  o FBC: Note platelet count as thrombocytopenia may need replacement
  o G+H and crossmatch
  o EUC (especially urea and creatinine). Urea can be disproportionately elevated from breakdown of blood products in stomach.
  o LFTs and coags looking for hepatic synthetic dysfunction (raised bilirubin, low albumin, high INR).
• CXR/ECG if the patient has a significant risk of chest pathology e.g. cardiac history. In more elderly patients age >50 an ECG is useful

5. Management
• If a patient does not have chronic liver disease, treat with proton pump inhibitor (PPI) infusion. An acidic environment in stomach is related to poor haemostasis. Most centres use a bolus e.g. 80mg IV pantoprazole bolus followed by an infusion of 8mg/hour.
• **Data shows pre-endoscopy PPI doesn’t have a mortality benefit, but there is good evidence for post-endoscopy PPI. Bottom line is even though there is not a lot of evidence to show a benefit, most gastroenterologist would prefer starting a PPI infusion pre-endoscopy.**
• If a patient has chronic liver disease (based on physical signs or abnormal LFTs), in addition to PPI infusion:
  o **Octreotide infusion** (somatostatin analogue) to vasoconstrict the splanchnic vasculature and reduce the amount of blood that can bleed out of the varices.
  o **Antibiotics** reduce mortality in chronic liver disease patients with upper GI bleeding to prevent spontaneous bacterial peritonitis, reduce infection e.g. third generation cephalosporin or tazocin. Use independent of the presence of ascites

6. The patient’s haemoglobin comes back at 78, does this patient need a transfusion?
• In patients critically unwell (e.g. in ICU) restrictive transfusion aiming for Hb 80 (rather than 100) has better outcomes.
• A study in NEJM\(^1\) found in upper GI bleeders, restrictive transfusion (transfusing if Hb <70 until Hb improved to 70-90) was associated with better outcomes than liberal transfusion (transfusing if Hb <90).
• However patients with major exsanguinating bleeds or IHD/cerebrovascular disease/peripheral vascular disease were not included - these patients need more liberal transfusion.
• Local practice now is to aim for Hb 80-90
• Speak to gastro registrar to find out the timing for endoscopy (if unable to have endoscopy in the next 6-8hrs and the patient is actively bleeding that may warrant a transfusion)

7. The coags come back and the INR is high and the platelets are low. What are the indications for correcting the coagulopathy?
• **Managing coagulopathy**
  o If the patient is on anticoagulation for metallic heart valve and the INR is within therapeutic range and patient is not exsanguinating we can accept a higher INR for these patients.
  o In liver disease patients we would accept a high INR up to 2.0 unless they are bleeding out (aim INR < 1.5).
- Correct INR with FFP or prothrombinex if the patient is volume overloaded.
- Be cautious giving vitamin K for patients on warfarin (discuss with gastro registrar) as consequences of vitamin K post-endoscopy include a prolonged hospital admission to return INR back to therapeutic range.
- Vitamin K in patients with liver disease won't be very helpful as these patients lack synthetic function
  - Managing thrombocytopenia
    - Aim for platelets > 50.
    - If the patient is on antiplatelet medications (aspirin/clopidogrel) cannot reverse the effects but can give pooled platelets to give the patient functional platelets
    - Role of transexamic acid uncertain in GI bleeding

8. **Who needs an endoscopy?**
   - Anyone with an upper GI bleed needs endoscopy but the urgency depends on the clinical scenario
   - If the patient is haemodynamically unstable, has had a large bleed, and despite resuscitation they don't improve they need an urgent endoscopy
   - Patients with varices need a more urgent endoscopy
   - Others may be able to wait until the next working day

9. **Take home messages**
   - Resuscitation is critically important
   - Obtain good IV access and give fluids followed by blood products
   - In cirrhotic patients antibiotics can improve mortality and prevent rebleeding
   - Transfuse patients up to Hb 80-90 except in those with CVD/IHD/PVD

**References:**