Learning Objectives

- Identify most common causes of GI haemorrhage
- Describe Medical, endoscopic and surgical treatment of acute non-variceal haemorrhage
- Manage variceal haemorrhage
- Discuss common causes and management of severe lower GI hge (haematochezia)
ACUTE NVGI HAEMORRHAGE

- Mortality rate varies between 3.5 and 14 %
  - persistent despite advances in surgery in last 20 yrs

Bleeding from Peptic Ulceration

- Early 30s – mortality 25%
- 40s- introduction of active transfusion – mortality 14%
- 60s- aggressive surgery – mortality 8.6%
- 90s – bleeding unit – mortality 4.1%

Studies from Aberdeen
Why no change in mortality?

- Steady increase in age
  - 40s 29% over 60
  - 60s 49% over 60
  - 90s 55% over 60 37% over 70 19% over 80

- Increase in NSAID use
  - 60s 28%
  - 90s 46%
Risk factors

- Age over 65
- NSAIDs
- History of peptic ulcer disease
- Steroids
- Cardiovascular disease
- Warfarin
- H. pylori is not an independent risk factor
Potential problems

- Further haemorrhage
  - Continuing blood loss in a 1/3 of pts
  - Re-bleed

- Early endoscopy and surgical input identifies the high risk groups
  gives better prognosis
Potential problems

- Certain causes of bleeding have inherently poor prognosis
  - Variceal bleeding—40% mortality
  - Tumours
  - Bleeding after admissions for other problems: 8x greater mortality
Aetiology of NVH

- Peptic ulcer disease 50%
  - H Pylori or NSAID
  - Alcohol and NSAID - synergistic effect
  - Significant haemorrhage - erosion of an underlying artery
  - Magnitude of bleeding related to the size of the arterial defect and the diameter of the artery.
  - Large, posterior duodenal ulcers - gastroduodenal artery
  - High, lesser curve gastric ulcers - branches of the left gastric artery.
  - H/O dyspepsia NOT COMMON.
Aetiology of NVH

- Stomal ulcer — 1-2% in h/o gastric surgery
- Carcinoma of the stomach — 1-2%
- GIST – can also be in duodenum
- Haemobilia– rare in chronic pancreatitis
- Diverticula of SB incl Meckel’s
- Blood diseases
- Pseudoxanthoma elasticum
- Aortointestinal fistula
- Mallory-Weiss 6-8%
- Stress ulceration – multiple erosions— 4%
- Dieulafoy’s – 5%-- ulcer in vascular abn in fundus -- detected by palpation
- Reflux oesophagitis
Bleeding stomal ulcer
Dieulafoy’s lesion
Mallory Weiss
CLINICAL FEATURES

■ Confirm blood has been voided
  □ NGT – clear in up to 10% of patients
  □ Rectal examination
  □ Period of observation in stable patient
■ History of dyspepsia not required
■ History of varices, peptic disease
■ Aortic aneurysm repair
■ NSAID and Alcohol
■ Urea rises in upper GI but not Lower GI
NG Lavage

- To identify and quantify upper GI bleeding
- To improve visualisation in endoscopy
- No benefit from cold lavage
- IV metoclopramide clears stomach as well
MANAGEMENT

■ A- Airway
  □ vomit/ clot obstructing upper airway

■ B- Breathing
  □ Aspiration pneumonia (22% of severe upper GI Hge)

■ C- Circulation
  □ Obtain vascular access – wide bore-cannula F14 and get x-match
  □ Assess for hypovolaemia – Fluid resuscitation
  □ Assess for active bleeding – Control bleeding
Management of hypovolaemia

- Hypotensive resuscitation
- Fluids 500 mls/ 15 min and titrate according to, P, BP, CVP and urine output
- Crystalloids followed by colloids followed by blood.
- HDU / ITU
Medical therapy

- Platelet function and clotting better in neutral pH
- H2-receptor blockers - meta-analysis no difference
- PPI – reduce rate of re-bleeding and surgery esp after endoscopic therapy
  - 40 mg BD po
  - 80 mg IV followed by 8mg/hr for 72 hrs
- ? role of octreotide
Control bleeding

- Endoscope
  - Video-endoscopy vs fibreoptic endoscopy
  - Paediatric endoscope (2.8mm working channel)
    Vs
    double channel endoscope
  Vs
  Single channel wide (3.8mm) with suction/irrigation endoscope
Endoscopy technique

- Within 24 hours
- Sed vs GA
- Tilting trolley
- Left lateral head down to see distal stomach
- Right lateral head up to see fundus
- ? Pharyngeal overtube
Endoscopic stigmata of bleeding ulcer

- Active ARTERIAL bleeding
- Active oozing
- Visible vessel
- Adherent clot
- Flat red or black spots/ slough
- Oozing on contact from edge
Arterial bleeding
Clot over visible vessel

FIGURE 5.9. Clot overlying a visible vessel.
Ulcer with visible vessel
Slough with visible vessel
Clot on ulcer
TABLE 5.4.
Prevalence of stigmata of ulcer hemorrhage and outcomes of ICU patients with severe ulcer bleeding

<table>
<thead>
<tr>
<th>Endoscopic Appearance</th>
<th>% of Total</th>
<th>More Bleeding*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active bleeding**</td>
<td>12%</td>
<td>68%</td>
</tr>
<tr>
<td>Nonbleeding visible vessel</td>
<td>24%</td>
<td>50%</td>
</tr>
<tr>
<td>Nonbleeding adherent clot</td>
<td>10%</td>
<td>33%</td>
</tr>
<tr>
<td>Oozing bleeding without clot or vessel***</td>
<td>7%</td>
<td>10%</td>
</tr>
<tr>
<td>Gray slough, flat red or black spot</td>
<td>14%</td>
<td>7%</td>
</tr>
<tr>
<td>Clean ulcer base</td>
<td>33%</td>
<td>3%</td>
</tr>
</tbody>
</table>

This included 200 patients admitted to an ICU with severe bleeding whose ulcer could be identified on emergency endoscopy in UCLA-CURE studies. All patients received an H₂ receptor antagonist but did not have therapeutic endoscopy.
FIGURE 5.5. Natural history of ulcer hemorrhage: UCLA-CURE and others.
Endoscopic therapy

- Reduces chance of surgery in active bleeding from 60 to 15%
- Reduces mortality from UGI bleeding
Endoscopic Haemostatic therapy

- Reproducible effectiveness
- Easy, rapid application
- Relatively low expense
- Portability
- Availability
Endoscopic treatment

- Thermally active
  - Laser / argon photocoagulation
  - Bipolar diathermy
  - Heat probe
  - Monopolar

- Injectable
  - Adrenaline injection
  - Injection sclerotherapy
  - Clotting factors/ tissue glue

- Mechanical
  - Clips
  - Bands
  - Loops
  - Suturing

- Combination therapy
Thermally active

- Laser photocoagulation
  - Delivers heat to tissue
  - Nd-YAG or Argon plasma
  - Perforation and exacerbation of bleeding
  - Expensive, dedicated large unit, protection

- Bipolar/monopolar diathermy
  - Superseded by heat probe

- Heat probe
  - Coil in tip reaching 150°C
  - Coaptive coagulation
  - 3.2 mm probe — 4 pulses of 30J (Jensen 1990)
  - Change position of probe
Injectable Endoscopic treatment

- Adrenaline injection
  - Tamponade, vasospasm, platelet activation
  - 1 in 10000
  - 0.5 ml boluses - usually 8
  - Force needed

- Injection sclerotherapy
  - Absolute alcohol
  - 1% polycanol
  - 5% ethanolmine
  - 3% STD
Mechanical

- Endoclip
- Needs experience
- Results improving with experience
- Difficult in hard, fibrotic ulcers
Clip deployment
Endoscopic treatment

- Combination therapy
  - Adrenaline and heat probe
  - Better results than adrenaline only (Chung 1997)
  - Adrenaline and bipolar (gold probe)
  - Adrenaline followed by ethanolamine
  - Reduction in re-bleeding (Oxner 1992)
  - Injection haemostasis followed by clips
Gold probe
Adrenaline inj and clip

FIGURE 5.10. Combination therapy of adherent clot overlying an ulcer.
Surgical treatment

- If endoscopic treatment is unsuccessful
- If re-bleeding occurs after successful endoscopic treatment
- Repeat endoscopic treatment – no clinical evidence— may result in suboptimal pt
Surgery for Bleeding D. Ulcer

- Duodenotomy
- Underrunning of vessel- 23 mm needle 0 or 1 PDS or prolene
- If pylorus opened for access- pyloroplasty
- If vagotomy performed – pyloroplasty
  only done in pts with h/o failed med treatment for ulcers
Large duodenal ulcer

- Failure to close duodenotomy
- Antrectomy after dividing right gastric and gastro-epiploic
- Vagotomy and gastroenterostomy
- Difficult to close duodenum
- Bentley’s method of duodenal closure
- Tube duodenostomy
Bleeding gastric ulcer

- 8 of 61 malignant (Hunt 1982)
- Initial under-run for haemostasis

- Excision of ulcer

- Dieulafoy lesion
  - Clipping usually successful
  - – palpable – under-run
Surgery for Bleeding Mallory-Weiss or Oesophageal ulcer

- Rarely needed
  - adrenaline injection
  - Clips
- Mobilise OGJ
- Anterior vertical gastrotomy
- Rarely needs left thoracotomy
Clip in Mallory-Weiss
CONCLUSION

- Stable patient- H, repeated exam, upper GI endo within 24hrs
- Unstable patient- Hypotensive resuscitation and therapeutic endoscopy.
- Surgery after unsuccessful endoscopy or first rebleed
- Medical treatment for bleeding ulcers will decrease rebleeding but does not improve mortality (unlike varices)
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