Haemorrhage

Def: Escape of blood from the vascular system.
Types of Hge

1. According to site
   a) Revealed (apparent)
      i. External
         a. Wounds
         b. Ulcers
         c. Tumours
      ii. Natural orifices
          a. epistaxis
          b. hemoptysis
          c. hematemeses
          d. hematuria
          e. menorhagia
   b) Concealed
      i. Internal Haemorrhage
         a. hemothorax
         b. hemopericardium
         c. hemoperitoneum
         d. hemarthrosis
      ii. Interstitial Haemorrhage
         a. hematoma
         b. bruises
2. According to the causative blood vessel

i. **Arterial**
   a. Bright red
   b. long distance
   c. oscillations
   d. ↓ with prearterial pressure

ii. **Venous**
   a. dark red
   b. trickle on the skin
   c. continuous
   d. ↓ with distal pressure

iii. **Capillary**
    a. oozing
    b. bright red
3. According to Etiology

i. **Traumatic**
   (according to the time)
   a) **Primary** at the time of injury
   b) **Secondary** (during 2\textsuperscript{nd} week)
   Sepsis $\rightarrow$ dissolves the clot $\rightarrow$ erodes the vessel wall
   c) **Reactionary** (1\textsuperscript{st} day)
   $\uparrow$ Blood Pressure $\rightarrow$ slipped ligature

ii. **Pathological**
   a) Erosion of the blood vessel wall 2\textsuperscript{nd}ry to sepsis or tumour
   b) Defective coagulation process
e.g. hemophilia, liver disease with $\downarrow$ vit.K, vit.C deficiency, drug toxicity
Mechanism Of Hemostasis

Adapted from Escobar et al.
Clinical Picture Of Hge

1) Acute Hge
   a) General
   b) Local

2) Chronic Hge
1) Acute Hge

- **A) General**

  *Signs and symptoms of shock*
  
i) Rapid weak pulse
  
ii) Low systolic and diastolic pressure
  
iii) Cold sweaty skin
  
iv) Restlesness and fear
  
v) Deep sighing respiration (Air Hunger)
  
vi) Collapsed peripheral veins
  
vii) ↓ Urine output volume

- **B) Local**

  *BLEEDING*
  
i) External
  
ii) Internal
  
iii) Interstitial
2) *Chronic Hge*

Anemia (pallor, easy fatiguability)

↓

Heart Failure

e.g. Bleeding Piles

Bleeding Peptic Ulcer
Hemophilia

- Hemorrhagic condition caused by deficiency of Factor VIII in the blood (AHG) (ANTIHEMOPHILIC GLOBULIN)

- Sex linked transmitted by asymptomatic female carrier and manifests only in Males.

- Bleeding may be precipitated by minor trauma or may be spontaneous

- If you plan surgery you must prepare AHG (bottles) given before, during, and after the operation or Fresh blood or Fresh frozen plasma.
Treatment Of Hge

• **STOP BLEEDING**
  a) **Pressure and Packing**
      Pack + Tourniquet (time??)
  b) **Position**
      O₂ Inhalation
  c) **Sedation** (e.g. morphine)
      To relieve pain, calm restlessness, aid cerebral and coronary blood flow
  d) **Operations**
     • Artery forceps
     • Electro coagulation
     • Packing the wound
     • Packing with surgicel or piece of muscle or Gel Foam → thrombokinase → stops bleeding

• **RESTORE BLOOD VOLUME**
  1) Blood
  2) Fluid + Plasma Transfusion
Shock is a term used to describe a clinical state (not a disease) comprising pallor, sweating, coldness & peripheral cyanosis.
Definition:

- inadequate delivery of oxygen and nutrients to maintain normal tissue and cellular function
Types of Shock

Hypovolemic shock

- Hemorrhage
- Burns

- Diarrhea
- Vomiting

- Peritonitis
Hypovolemic Shock

- The human body responds to acute hemorrhage by activating 4 major physiologic systems: the hematologic system, the cardiovascular system, the renal system, and the neuroendocrine system.
Vasodilatory shock (septic shock)

- In vasodilatory shock, hypotension results from failure of the vascular smooth muscle to constrict appropriately. Vasodilatory shock is characterized by both peripheral vasodilatation with resultant hypotension, and resistance to treatment with vasopressors.
Neurogenic Shock:

- Neurogenic shock refers to diminished tissue perfusion as a result of loss of vasomotor tone to peripheral arterial beds. Loss of vasoconstrictor impulses results in increased vascular capacitance, decreased venous return, and decreased cardiac output.
## Symptoms of Shock

<table>
<thead>
<tr>
<th>General Symptoms</th>
<th>Specific Symptoms</th>
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<tbody>
<tr>
<td>• Anxiety / Nervousness</td>
<td>• Hx of Trauma / other illness</td>
</tr>
<tr>
<td>• Dizziness</td>
<td>• Vomiting &amp; Diarrhoea</td>
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<tr>
<td>• Weakness</td>
<td>• Chest Pain</td>
</tr>
<tr>
<td>• Faintness</td>
<td>• Fevers / Rigors</td>
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<tr>
<td>• Nausea &amp; Vomiting</td>
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<tr>
<td>• Thirst</td>
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<tr>
<td>• Confusion</td>
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<tr>
<td>• Decreased UO</td>
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Signs of Shock

Pale
Cold & Clammy sweating
Cyanosis
Tachypnoea
Tachycardia
Unconscious
Hypotensive
Stridor
Confused / Agitated
Treatment of shock

• I.V. drip      e.g. blood, plasma, fluids
• Steroids     e.g. anaphylactic & septic shock
• Antibiotics
• Oxygen
• Positioning