Post Partum Haemorrhage (PPH)

Dr Ismaiel Abu Mahfouz
Primary PPH: Definition

Primary PPH (Traditional definition)

• Loss of 500 ml or more of blood from genital tract within 24 hours of delivery “after 20 weeks gestation”

OR

• HCT drop of 10 %

OR

• Need for blood transfusion
Definition

Excessive bleeding that

- Makes patient symptomatic: Light-headedness, dizziness, syncope
- Results in signs of hypovolemia: Hypotension, tachycardia, or oliguria

These changes will only occur after the patient has lost a significant amount of blood.
## PPH Classification

<table>
<thead>
<tr>
<th>Hemorrhage class</th>
<th>Acute blood loss</th>
<th>% Lost</th>
<th>Physiologic response</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1000 cc</td>
<td>15</td>
<td>Dizziness, palpitations, minimal blood pressure change</td>
</tr>
<tr>
<td>2</td>
<td>1500 cc</td>
<td>20-25</td>
<td>Tachycardia, tachypnea, sweating, weakness, narrowed pulse pressure, orthostatic hypotension</td>
</tr>
<tr>
<td>3</td>
<td>2000 cc</td>
<td>30-35</td>
<td>Significant tachycardia, restlessness, pallor, cool extremities, hypotension</td>
</tr>
<tr>
<td>4</td>
<td>≥2500 cc</td>
<td>40</td>
<td>Shock, air hunger, oliguria or anuria</td>
</tr>
</tbody>
</table>
Primary vs Secondary PPH

**Primary:**
- PPH within 24 hrs
- Either:
  - Minor: 500 ml to 1000 ml
  - Major: > 1000 ml

  Sub-classified into:
  - Moderate (1000–2000 ml)
  - Severe (> 2000 ml)

**Secondary**

> 24 hrs – 12 weeks
PPH: Diagnosis

Estimation of blood loss

• 1 ml of blood weighs approx. one gm
• Visual “inspection” underestimate blood loss by 33-50%
PPH: Major causes

PPH is not a diagnosis

Causes ; The 4Ts:

• Tone (Uterine atony)
• Tissue (retained tissues)
• Trauma
• Thrombin (Abnormal coagulation)
## Causes of primary PPH

### Tone

70-90%

<table>
<thead>
<tr>
<th>Antepartum</th>
<th>Intrapartum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Previous PPH</td>
<td>Prolonged labour &gt;12 H</td>
</tr>
<tr>
<td>Placenta praevia</td>
<td>Prolonged third stage</td>
</tr>
<tr>
<td>Maternal obesity</td>
<td>Sepsis</td>
</tr>
<tr>
<td>Baby &gt;4 kg</td>
<td></td>
</tr>
<tr>
<td>Multiple pregnancy</td>
<td></td>
</tr>
<tr>
<td>Induction of labour</td>
<td></td>
</tr>
</tbody>
</table>

### Thrombin

<table>
<thead>
<tr>
<th>Antepartum</th>
<th>Intrapartum</th>
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</thead>
<tbody>
<tr>
<td>Pre-eclampsia</td>
<td>Placental abruption</td>
</tr>
<tr>
<td>Sepsis</td>
<td>Sepsis</td>
</tr>
<tr>
<td>Anticoagulant therapy</td>
<td></td>
</tr>
<tr>
<td>Inherited bleeding disease</td>
<td></td>
</tr>
</tbody>
</table>

### Trauma: Uterine/cervical/vaginal injury

### Tissue: Retained products of conception
Prevention

- Anticipate: modify care plans when risk factors are present
- All pregnant women should be offered screening for anaemia
- All pregnant women who have had a previous CS should have placental site determined (Abnormal placentation)
- Active management offered routinely to all women in 3rd stage of labour
Primary PPH: Mx
Management

Team Work

• Multidisciplinary team efforts
  OBs, MW, RNs & Anaesthesiologists, ...
• Be prepared in case of risk factors
• Early recognition
• Involve other services as necessary: Interventional radiology, haematologists
• Lab, blood bank, ICU...
Primary PPH; Management

- Call for **HELP**
- ABC
- 2 IV lines & replace blood loss, fluids
- Bloods for CBC, clotting profile,.....
- Foley’s catheter
- Cross match 4-6 units of blood
- Medication:
  - Syntocinon
  - Ergometrine
  - Combination both (Syntometrin)
  - Haemabate
  - Misoprostol
Primary PPH

Tranexamic acid

• Should be considered as early as possible
• Reduces blood loss
• Dose: 1 g IV slowly
Primary PPH; Management

- Examine the uterus to rule out atony
- Examine the vagina and cervix to rule out lacerations; repair if present
- Explore the uterus to rule out retained placenta
Primary PPH; Management

- Manual uterine massage
- Removal of retained placental tissue
- Packing the uterus (to compress bleeding areas)
- Secure bleeding vessels
- B- lynch suture
- Internal Iliac artery ligation
- Hysterectomy
Arterial embolisation

- Pelvic arteriography may show the site of bleeding
- Therapeutic arterial embolisation may stop bleeding
- Should be considered only if
  - Patient is stable
  - Bleeding is not severe
Recombinant Activated Factor VIIa (Novoseven)

Mechanism of action

- Enhances platelet aggregation
- Promotes clotting through extrinsic pathway (binds to tissue factor)
- Activates Factor IX & X, & generates thrombin

Onset of action: controls bleeding rapidly “10 minutes”

Adverse effects

- < 1%
- Fever, Headache, nausea, vomiting, dizziness
  Injection site reactions (pain, redness, or irritation)

Short ½ life (2 hours)
High cost
Hysterectomy

Definitive therapy – timed intervention; don’t delay!

• Refractory atony
• Irreparable uterine rupture/vessel lacerations
• Placental invasion
Complications of PPH

• Sheehan’s syndrome: Pituitary ischemic injury (necrosis of the anterior lobe of the pituitary gland)
• Postpartum infection
• DIC
• Anemia
• Transfusion hepatitis
• Asherman’s syndrome (Intrauterine adhesion)
PPH: After care

Documentation
• Accurate documentation of events is essential

Debriefing
• An opportunity to discuss the events surrounding the obstetric haemorrhage should be offered to the woman (possibly with family too) at a mutually convenient time
• Debrief the staff involved
Secondary PPH: Mx
Causes of Secondary PPH

- Endometritis
- Retained placental tissue
- Sub-involution of placental site
- Ruptured pseudo-aneurysms and arteriovenous malformations (rare)
Secondary PPH

Endometritis
• Combination of ampicillin (clindamycin if penicillin allergic) and metronidazole
• In cases of endomyometritis (tender uterus) or overt sepsis, add gentamicin

Retained tissues
Surgical measures (Evacuation of retained tissues)
  o If excessive or continuing bleeding, irrespective of USS findings
  o Carries a high risk for uterine perforation
PPH: Remember

- Anticipate
- Active Mx of third stage decreases risk of PPH
- Early identification
- Accurate estimation of blood loss
- Acute management requires a multi-disciplinary approach with the involvement of senior clinicians
- Early transfusion and correction of coagulopathy is fundamental