MANAGEMENT OF POST PARTUM HAEMORRHAGE

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Plan

- Introduction.
- Vital statistics.
- Etiologies of PPH.
- Risk Factors to Specific Etiologies.
- Management of PPH.
- Conclusion.
INTRODUCTION

• Maternal mortality, dramatic reduction, since blood transfusion.
• Haemorrhage remains prominent cause of maternal mortality.
• Delivery followed by <500ml, volume >500ml after 3rd stage, constitutes PPH.
• Placenta delivery, AMTSL, maternal surface (Duncan), foetal surface (Baudelocque).
• Postpartum period: immediate, early and late.
• PPH divided into 1ary and 2ary (1-42 days).
Introduction-1

- Over half a million women die during pregnancy and childbirth each year
- 99% in developing countries
- 150,000 women bleed to death
- Postpartum haemorrhage is the major cause of maternal deaths
- Most deliveries are attended by non-skilled persons, often at home, when there are poorly functioning health systems
- Skilled care with a functional health system can make a difference

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Vital Statistics.

Postpartum 60%
During pregnancy 24%
During delivery 16%

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## WHO analysis of causes of maternal death: a systematic review

*Lancet 367: 1066-1074, 2006*

<table>
<thead>
<tr>
<th>Country</th>
<th>Year</th>
<th>Maternal Death</th>
<th>MMR</th>
<th>Haemorrhage</th>
</tr>
</thead>
<tbody>
<tr>
<td>DR Congo</td>
<td>97</td>
<td>143</td>
<td>510</td>
<td>16%</td>
</tr>
<tr>
<td>Egypt</td>
<td>200</td>
<td>84</td>
<td>585</td>
<td>30%</td>
</tr>
<tr>
<td>Senegal</td>
<td>202</td>
<td>87</td>
<td>690</td>
<td>22%</td>
</tr>
<tr>
<td>Tanzania</td>
<td>88</td>
<td>76</td>
<td>529</td>
<td>23%</td>
</tr>
<tr>
<td>South Africa</td>
<td>203</td>
<td>121</td>
<td>150</td>
<td>10%</td>
</tr>
<tr>
<td>Zambia</td>
<td>98</td>
<td>349</td>
<td>729</td>
<td>28%</td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>201</td>
<td>92</td>
<td>695</td>
<td>19%</td>
</tr>
<tr>
<td>MCW Africa</td>
<td>201</td>
<td>55</td>
<td>334</td>
<td>33%</td>
</tr>
</tbody>
</table>
ETIOLOGY OF POSTPARTUM HAEMORRHAGE.

- PPH several predisposing factors, more than two may exist in the same patient.
- Causes may be summarised by four P’s.
  1. Placental abnormalities: retention, placenta praevia, accreta, abruption.
  2. Passage (genital tract trauma): tears /lacerations.
  4. Plasma: Coagulation defects / DIC.

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## Etiology of PPH: INSERM Study 1998

<table>
<thead>
<tr>
<th>Etiology</th>
<th>Number of cases</th>
<th>Percent</th>
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<tbody>
<tr>
<td>Atony</td>
<td>69</td>
<td>42%</td>
</tr>
<tr>
<td>Placenta Retention</td>
<td>27</td>
<td>16%</td>
</tr>
<tr>
<td>Uterine rupture+cervical tear</td>
<td>25</td>
<td>15%</td>
</tr>
<tr>
<td>PP+Accreta</td>
<td>19</td>
<td>11%</td>
</tr>
<tr>
<td>Abruptio placenta</td>
<td>18</td>
<td>10%</td>
</tr>
<tr>
<td>Caesarean section</td>
<td>4</td>
<td>2.4%</td>
</tr>
<tr>
<td>Others</td>
<td>3</td>
<td>1.8%</td>
</tr>
</tbody>
</table>
RISK FACTORS: PLACENTAL ABNORMALITIES

- Previous uterine scar (C/S, Myomectomy, uterine perforation).
- Large placentas (multiple pregnancy, succenturate placenta, diabetes, Rhesus incompatibilities, molar pregnancy).
- IUD, chorioamnionitis.
- Poor management of 3rd stage labour.
RISK FACTORS: GENITAL TRACT TRAUMA

- Instrumental deliveries (forceps, vacuum extraction).
- Previous perineal tears, short perineum, vaginoplasty.
- Episiotomy done early in labour.
- Surgery / scar cervix.
- Poor conduct of delivery.
- Macrosomia >4000gms, shoulder dystocia, malposition, internal podalic versions.

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RISK FACTORS: UTERINE RUPTURE

• Previous scarred uterus.
• Grandmultiparity.
• Use of oxycytocics, misoprostol.
• Use of traditional oxycytocics (honey).
• Previous induced abortions with perforation of uterus.
• Intra-uterine manipulations (internal podalic version, destructive deliveries).
• Foetal malformation (conjoint twins, hydrocephalus etc).
• Poor conduct of delivery (abdominal expression, shoulder dystocia).

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RISK FACTORS: UTERINE ATONY

- Over distension of uterus (multiple foetuses, hydramnios).
- Placental abruption (Couvelaire’s uterus).
- Exhausted myometrium (precipitated or vigorous labour, prolonged labour, use of oxytocics, anaesthesia = halogenated agents, conduction anaesthesia).
- Past history of PPH.
- Myomatous uterus.
- Grandmultiparity, chorioamnionitis.
- Traditional practices e.g. hot water.

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RISK FACTORS: UTERINE INVERSION

• Less frequent, prevalence 1 in 2000-7000 deliveries.
• Poor management of 3rd stage of labour.
• Placenta accreta.
• Active management of 3rd stage of labour facilitates diagnosis and treatment.
• Divided into 4 stages, may be acute, sub-acute or chronic.
RISK FACTORS: COAGULATION DEFECTS

- Placental abruption.
- Intra-uterine death.
- Amniotic fluid embolism.
- Induced abortions.
- Chorioamnionitis.
- Massive blood transfusion.
- Eclampsia/ severe pre-eclampsia.
- Coagulation defects e.g. coagulation factor deficiency.
- Autoimmune thrombocytopenia.
- Drugs: anticoagulants.
MANAGEMENT OF PPH

Estimation of blood loss:
- Visual estimate, usually under estimate.
- Haemodynamic parameters (BP, pulse, CVP).
- Tilt test (orthostatic hypotension).
- Urine flow.

• Treatment:
- General measures: Set up IV-line, Fluid /blood replacement until urine flow varies 30-60ml/hr, Hct of 30%. Fresh blood and Ringer lactate solution preferably.
MANAGEMENT OF PPH (1)

- Etiologic measures. Treat the underlying cause.
- Preventive measures:
  - Type and cross match blood for high risk patients (P/H of PPH, grandmultiparity, placenta praevia, placental abruption, severe PET/eclampsia etc).
  - Active management of 3rd stage of labour.
  - Continue IV oxytocics infusion in induced or augmented labour.

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**Uterine Atony**

Oxytocin  5 UI IV slowly
10 UI intra-mural
20 UI / 500 cc pass in an hour.

- Misoprostol IR (During uterine revision) 3 tabs of 200µg ?

- Sulprostone (Nalador) !!!
Uterine Atony-1

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Surgical Management of PPH

- Surgical procedures range from conservative to radical surgery:
  - Ligation of the Arterial supply to the uterus.
  - Embolisation of the Artery.
  - Sub-total hysterectomy.
  - Total abdominal hysterectomy.
- N:B However, the choice of type of treatment will depend on the infrastructure, the competence of the team and the haemodynamic status of the patient.
Uterine Atony-2
Uterine Atony, selective ligation

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Ligation of the Hypogastric Artery
Uterine Compression Sutures

Embolisation of Hypogastric Artery
Technique of embolisation
• Pregnancy causes increase in clotting factors (I, II, VII, VIII, IX, X).
• Plasminogen levels are increased.
• Plasmin activity during the antepartum is decreased.
• Various stresses incite conversion of plasminogen to plasmin, especially coagulation mechanism.
  - Extrinsic pathway, release of tissue thromboplastin (placenta, amniotic fluid, myometrium).
DISSEMINATED INTRAVASCULAR COAGULATION (1)

- Intrinsic pathway by collagen and other tissue to which plasma is exposed through loss of endothelial integrity (rupture, retroplacental haematoma).

- Direct activation of factor X by appropriate enzymes (protease), seen in some bacterial infection or neoplasm.

Plasminogen is activated to plasmin, lyses of fibrinogen, fibrin monomer and polymer, formation of fibrinogen-fibrin degradation products or split products.

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DISSEMINATED INTRAVASCULAR COAGULATION (2)

- Degradation product, depending on size contribute to the defective haemostasis (delay fibrin polymerisation, prolong prothrombin time, impair clot retraction and stability.

The treatment of DIC is a combination of the following:

- Replacement of deficient factors especially fibrinogen.
- Injection of heparin (block further intravascular coagulation).
- Administration of epsilon amino caproic acid (block fibrinolysis).

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CONCLUSION

• PPH
  – Obstetrical emergency;
  – May be catastrophic;
  – Grave consequence
  – Necessitates prompt action, involving nurses, hematologist, intensive care Doctor and obstetrician
THANK
YOU