MANAGEMENT OF OBSTETRIC HAEMORRHAGE

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• The problem
• The challenges we face
The problem

- Haemorrhage is the leading cause of maternal death worldwide
- UK deaths from haemorrhage are now rare, but have remained static
- Mortality rate of 0.56 per 100000 births
- 13 direct deaths in the UK between 2012-2014
- Severe morbidity is 50x mortality rate
Maternal death

Causes of maternal death 2012-14
Circulatory changes in pregnancy

- Circulating blood volume increases by 40-50% at term
- 100ml/kg – so 7 litres in a 70kg woman
- Cardiac Output increases by 50% at term
- Blood flow to the uterus at term is 850ml/min

- Theoretically - could bleed entire circulating blood volume within 10 mins
Haemorrhage

- Post partum haemorrhage (PPH) – greater than 500ml
- Major Obstetric haemorrhage (MOH) – greater than 1500ml
- Massive Obstetric haemorrhage – greater than 2500ml

- PPH – 2222 call stating Obstetric emergency
- MOH – 2222 call stating Major Obstetric haemorrhage
At Western Sussex

- Our haemorrhage rate has remained relatively static in last few years 2.8 – 3.5% of all deliveries

<table>
<thead>
<tr>
<th>Year</th>
<th>2015</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of births</td>
<td>5600</td>
<td>5017</td>
</tr>
<tr>
<td>&gt;1500ml</td>
<td>213</td>
<td>141</td>
</tr>
<tr>
<td>&gt;2500ml</td>
<td>29</td>
<td>30</td>
</tr>
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</table>
This should worry us all

### Overall assessment of care

Classification of care received for women who died and are included in the confidential enquiry chapters (n=183)

<table>
<thead>
<tr>
<th>Classification of care received</th>
<th>Number (%)</th>
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<tbody>
<tr>
<td>Good care</td>
<td>85 (46)</td>
</tr>
<tr>
<td>Improvements to care which would have made no difference to the outcome</td>
<td>22 (12)</td>
</tr>
<tr>
<td>Improvements to care which may have made a difference to the outcome</td>
<td>76 (42)</td>
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</table>
The challenges

• Uncontrolled haemorrhage is incredibly scary
• Lack of personnel is not necessarily the issue
• Lack of leadership and decision making is
• The list of tasks is huge and can be time consuming
The challenges

- Immediate actions in dealing with a patient with massive haemorrhage
  - Control obvious bleeding points (pressure, tourniquet, haemostatic dressings)
  - Administer high FIO2
  - IV access – largest bore possible including central access
  - If patient is conscious and talking and a peripheral pulse is present, the blood pressure is adequate.
- Baseline bloods – full blood count (FBC), prothrombin time (PT), activated partial thromboplastin time (aPTT), Clauss fibrinogen* and cross-match.
  - If available, undertake near-patient testing e.g. thromboelastography (TEG) or thromboelastometry (ROTEM).
- Fluid resuscitation – in the massive haemorrhage patient, this means warmed blood and blood components. In terms of time of availability, blood group O is the quickest, followed by group specific, then crossmatched blood.
  - Actively warm the patient and all transfused fluids.
  - Next steps: rapid access to imaging (ultrasound, radiography, CT), appropriate use of focused assessment with sonography for trauma scanning and/or early whole body CT if the patient is sufficiently stable, or surgery and further component therapy.
  - Alert theatre team about the need for cell salvage autotransfusion.
  - A derived fibrinogen is likely to be misleading and should not be used.
Immediate management of major postpartum haemorrhage

Call for help
- Senior midwives, experienced obstetricians, anaesthetist. Contact haematologist

**INITIAL ACTIONS**

- Lie flat
- Give high-flow oxygen

- Massage uterus
- Expel clots and rub up contraction
- Bimanual compression

- Intravenous access
- Two large-bore cannulae
- **Take blood samples:**
  - FBC, clotting screen, group and cross-match
  - 4 units

- Rapid fluid replacement
- Two litres of crystalloid – Hartmann’s or
  - 0.9% saline

- Observations
- Respiratory rate, pulse, BP, O₂ saturations

- Assess cause
- Atony
- Trauma
- Retained placental tissue
- Coagulation

**Stop the bleeding**

- Syntocinon 10 units/
  - Ergometrine 500 micrograms
  - IM or slow IV injection (ergometrine contraindicated if raised BP)

- Syntocinon infusion
  - 40 units syntocinon
  - IV infusion via pump over 4 hours

- Urinary catheter and urine measurement
  - Empty bladder, monitor urine output hourly

- Carboprost
  - 250 micrograms given IM every 15 minutes up to 8 doses

- Misoprostol
  - 800 micrograms given per rectum

**ONGOING MANAGEMENT**

- Massage uterus and bimanual compression
- **AND**
- Repair perineal / vaginal / cervical tears

**Assessment**

- Monitoring
  - Document all observations – use modified obstetric early warning score chart
  - Estimate blood loss/weigh all swabs
  - Accurate fluid balance

- Reassess causes of bleeding
  - Atony
  - Trauma
  - Retained placental tissue
  - Coagulation

- Blood transfusion/blood products
  - Consider: O-negative emergency blood
    - Use blood warmer and maintain maternal warmth
  - FFP, platelets, cryoprecipitate, factor VIIa
Case history

- 29 year old, 4th pregnancy
- Poor attender
- 2 previously uncomplicated vaginal births
- 3rd pregnancy presented late (36 weeks)
- Transverse lie – semi-elective LSCS under GA
Noonan syndrome

- Multiple malformation syndrome, similar to Turner’s
- 1 in 2500 births
- Heart defects 80-90%
- Short stature, ptosis
- Learning difficulties
- Micrognathia, high arched palate
So to recap

- 29 year old, 4th pregnancy, 30 weeks
- Poor attender
- 2 previously uncomplicated vaginal births
- 3rd pregnancy presented late (36 weeks) with transverse lie - semi-elective LSCS under GA
- Noonan syndrome, learning difficulties
- Von Willebrands
And....

- Major placenta praevia
Previous caesarean section.....

• Placenta accreta
What are our options?

- Make sure she doesn’t get booked for a Wednesday
- Detailed planning
Outcome

• She bled......

• .......a lot
## Proforma

### Time Help Summoned
- **Emergency Bell:**
  - 2222 Obstetric Emergency
  - 2222 Major Obstetric Haemorrhage
- **Massive Haemorrhage Event (6-2500ml) liaison with Haematology Consultant:**

### Western Sussex Hospitals NHS

### Postpartum Haemorrhage Proforma

#### DATE:

#### TIME COMMENCED:

### Running Blood Loss
- Blood loss with times should be measured at regular intervals:
  - **At 500mls and continuing call Obstetric Emergency**
  - **At 1500mls & ongoing bleeding call Major Obstetric Haemorrhage**

### Maternal Observations
- (transfer to MEOWS Chart ASAP)

<table>
<thead>
<tr>
<th>Time</th>
<th>BP</th>
<th>Pulse</th>
<th>Resps</th>
<th>O2 sats</th>
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### Other drugs:
- Misoprostol 800mcgs PR
  - **Time:**

### Carboprost (Haemobate) IM 250mcgs every 15 mins (max 8 doses, total 2mg) times:
- 1-2-3-4-
- 5-6-7-8-

### Trauma
- Perineal / cervical trauma check
  - Suturing required: Y/N

### Thrombin
- Known clotting disorder
  - Discussed with Haematologist

### IV Fluids given including blood products
- Fluid Balance Chart commenced:
  - State fluids given and times:

### Final Total Blood Loss: mls
Training

• Multidisciplinary simulation
• Emphasis on process, system and teamwork
• Local environment, equipment and procedure
• We run ours as fairly high fidelity simulations
• Debrief
Cell salvage

- The guidelines all say...all units should have ‘appropriate training’ and use regularly
- How do we achieve this?
- Routine practice in Worthing since 2002
- We reinfuse about 1 in 9 patients with some returned blood
- Most infused back has been 3.5 litres
- Only using ‘first stage’ enables us to keep costs down
In summary

- Haemorrhage remains a challenge, particularly in a DGH setting
- It is scary stuff
- It truly requires a multi-disciplinary approach
- Avoid doing tricky cases on a Wednesday