Primary postpartum haemorrhage

Clinical Guideline Presentation v5.0

45 minutes

Towards CPD Hours

References:

Queensland Clinical Guideline: Primary postpartum haemorrhage is the primary reference for this package.

Recommended citation:

Queensland Clinical Guidelines. Primary postpartum haemorrhage clinical guideline education presentation E18.1-1-V5-R23 . Queensland Health. 2018

Disclaimer:

This presentation is an implementation tool and should be used in conjunction with the published guideline. This information does not supersede or replace the guideline. Consult the guideline for further information and references.

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Learning objectives

- Identify prophylactic assessments and management for women at risk of PPH
- Identify initial management of PPH
- Recognise treatment and care options relevant to cause of PPH

Definitions

Primary postpartum haemorrhage is defined as excessive bleeding in the first 24 hours after birth. A variety of measures may be used to identify PPH.

Volume

- After vaginal birth ≥ 500 mL
- After CS ≥ 1000 mL
- Severe ≥ 1000 mL
- Very severe ≥ 2500 mL

Haematocrit

- Retrospective 10% decline in levels

If blood transfusion required:

- After ≥ 1000 mL loss or
- For Hb < 80 g/L due to PPH

Haemodynamic compromise

- May be first indication of PPH due to visual underestimation of blood loss
- Healthy postpartum woman may be asymptomatic to 1000 mL loss
- Compromise may appear earlier if:
  - Gestational hypertension with proteinuria
  - Anaemia
  - Dehydration
  - Small statue

Aetiology (4Ts)

Tone (70%)

- Atonic uterus

Trauma (20%)

- Lacerations of the cervix, vagina and perineum
- Extension laceration at CS
- Uterine rupture or inversion
- Non-genital tract trauma (e.g. subcapsular liver rupture)

Tissue (10%)

- Retained products, placenta, membranes, clots

Thrombin (<1 %)

- Coagulation abnormalities

Risk factors for PPH

There are many risk factors. Some women who have a PPH will have none

What are antenatal risk factors?

- ≥ 35 years of age
- Parity > 3
- Previous PPH
- Pre-eclampsia, diabetes, anticoagulants, polyhydramnios
- Obesity, anaemia
- Multiple pregnancy
- artificial reproductive technology
- Previous uterine surgery, fibroids
- Ethnicity— Asian, Pacific Island, Sub-Saharan Africa

What are intrapartum risk factors?

- Induction of labour
- Prolonged second and third stage
- Retained placenta
- Instrumental vaginal birth
- CS birth
- Macrosomia
- Uterine rupture
- Perineal trauma
- Infection
- Non-cephalic presentation
- GA

Antenatal anaemia

La'ei, a 24 year old G2P1 presents at 20 weeks. Her haemoglobin (Hb) is 80 g/L.

What will you discuss with La'ei about her Hb?

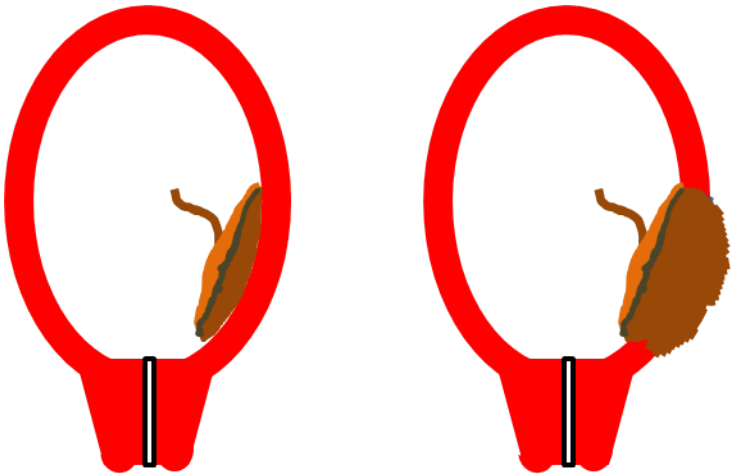
- The need to investigate the reason for her low Hb and monitor her Hb during pregnancy
- Increased risk of PPH if anaemic and importance of correcting before birth
- If iron deficiency anaemia, oral iron supplements
- Possibility of parenteral iron and/or antenatal transfusion
- How to minimise anaemia

Abnormal placentation

La'ei had a CS for her first birth. Her ultrasound scan suggests abnormal placentation and you recommend MRI.

What do you tell La'ei about PPH and abnormal placentation?

- Explain what it is
- Abnormal placentation is associated with risk of PPH
- Abnormal placentation is more likely after CS birth
- If confirmed, careful planning for birth is required relative to findings
  - Timing, location, mode of birth
  - Expert clinicians present
  - Resources and equipment available



normal percreta

Transfusion not an option

La’ei tells you she has recently become a Jehovah Witness (JW) and can’t have blood products

What will you discuss with La’ei about being a JW and the risk of PPH?

- Clarify and document what La’ei considers acceptable and unacceptable treatment options
- Discuss importance of pre-birth Hb
- Advise of the need for specialist involvement and potential interventions if PPH
- Recommend completion of an Advanced Health Directive
- Discuss birth plan

Birth and risk of PPH

La'ei wants to know what extra care she will need at the birth because of her risk factors and the fact that blood products are not an option for her.

For all modes of birth

- Antenatal planning for birth is essential
- Assessment of risk on presentation for birth
- IV access in labour
- Consider carbetocin IV for third stage management
- Experienced clinicians available
- Postnatal surveillance and monitoring

If CS?

- Intraoperative cell salvaging (if available)

If vaginal birth?

- Additional importance of proactive intrapartum management and prophylaxis including:
  - If delay in first or second stage
  - Active management of third stage
  - Monitoring for uterine rupture (especially as VBAC)
  - Assessment for raised temperature in labour

Estimation of blood loss

Visual estimation of blood loss often leads to underestimation

How can you improve accuracy of blood loss estimation?

- Take into account nature and speed of loss
- Clinical assessment for hypovolemic shock
- Weigh bloody linen, swabs, drapes
- Use pictorial guides of blood loss volume
- Participate in clinical simulation and collaborative practice models

What are the clinical findings relative to blood loss volume?

Blood loss (mL)	Systolic blood pressure	Signs and symptoms	Degree of shock
500–1000	Normal	Palpitations, dizziness, tachycardia	Compensated
1000–1500	Slight decrease	Weakness, sweating, tachycardia	Mild
1500–2000	Marked decrease (70–80 mm Hg)	Restlessness, pallor, oliguria	Moderate
2000–3000	Profound decrease (50–70 mmHg)	Collapse, air hunger, anuria	Severe

ROTEM® and TEG®

Also known as thromboelastometry and thromboelastograph®

What are ROTEM® and TEG®?

- Point of care blood clotting analysers used in the laboratory or the clinical setting
- Can guide and evaluate haemostatic treatment
- Decreases the time for blood test result availability
- Reduces the need for blood products
- Requires a locally agreed algorithm for interpretation of results and guided treatment strategy

Image used with permission of Haemoview Diagnostics

TEG® 6s hemostatsis analyzer image used by permission Haemonetics Corporation. TEG® and Thrombelastrograph® are registered trademarks of Haemonetics Corporation in the US, other countries or both.

Resuscitation

Vivienne has just had an uncomplicated vaginal birth. You note that she looks pale and clammy but is conscious. Her pad is soaked and you estimate at least 500 mL of blood on the sheets.

After calling for help, what are your initial actions?

- Lie Vivienne flat, keep her warm
- Administer oxygen at 10–15 L/min
- Monitor vital signs
- Four T assessment (tone, trauma, tissue, thrombin)
- Establish IV access x 2 and send urgent bloods
- Review birth history (third stage complete, routine oxytocin given)

What are important considerations during fluid resuscitation?

- Warm all fluids
- Avoid dilutional coagulopathy
  - Avoid > 2 L of crystalloids
  - Minimise colloids (if used, < 1.5 L)
- IDC—monitor input and output
- If indicated give 2 units of RBC (O negative or group specific)

Tranexamic acid

Tranexamic acid is a new addition to the 2018 PPH guideline.

Why give it?

Evidence suggests tranexamic acid:

- Reduces postpartum blood loss, blood transfusion, laparotomy to control bleeding and death due to PPH
- Does not increase risk of thromboembolic events

When do you give it?

- As soon as possible after onset of PPH and preferably within 3 hours of PPH

How do you give it?

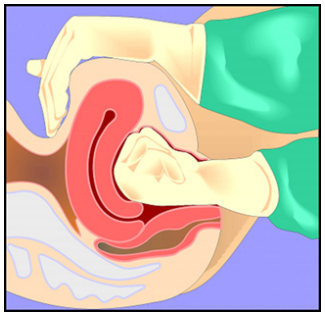
- Tranexamic acid 1 gram IV over 10 minutes
- If bleeding persists after 30 minutes or stops and restarts within 24 hours of first dose, a second dose may be given
- Reconstitution not required
- Administer via infusion device

4T assessment: Tone

You commence a 4T assessment of Vivienne.

What will you do during your assessment of uterine tone?

- Massage uterine fundus
- Assess need for bi-manual compression
- Check placenta and membranes are complete
- Expel uterine clots
- Ensure bladder is empty, insert IDC if necessary



What first line drugs for atonia will you consider?

- Oxytocin 5 IU IV over 1–2 minutes
- Oxytocin IV infusion (oxytocin 30 IU in 500 mL) at 5–10 IU units per hour via infusion pump
- Ergometrine 250 micrograms IM or
- Ergometrine 250–500 micrograms IV over 1–2 minutes

Image used with permission: Advanced Life Support Obstetrics (ALSO) Asia Pacific

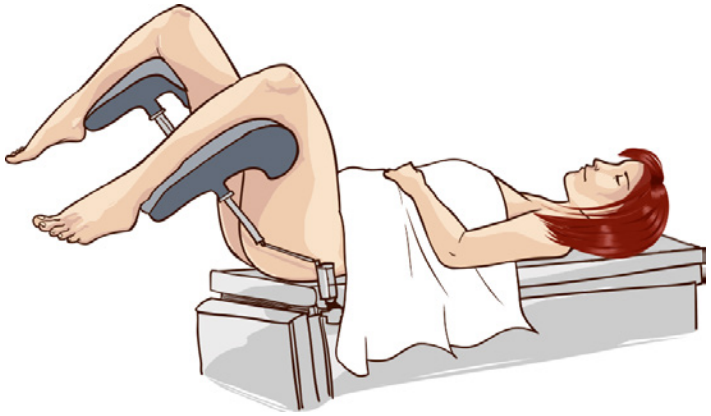
The uterine cavity must be empty of tissue for effective uterine contraction

4T assessment: Trauma

Vivienne is stable but continues to lose blood at a steady rate.

What causes of genital trauma will you assess for?

- Cervical trauma
- Uterine rupture
- Uterine inversion
- Puerperal haematoma



What are important considerations when assessing for any genital trauma?

- Review birth history for intrapartum risk factors
- Maximise visualisation of the genital tract (e.g. lithotomy, retractors, assistants)
- Effective anaesthetic is required (local/regional or GA)
- Ask: Is there a need for transfer to OT for optimal repair and/or to treat shock

4T assessment: Tissue

You detect that Vivienne has trailing membranes visible beyond the introitus.

How should this be managed?

- Use sponge holders to clamp membranes and without traction, roll forceps to create a rope of membranes
- Move forceps in an up and down motion and gently apply traction
- Maternal pushing may assist removal
- Monitor uterine tone and blood loss

If Vivienne had a retained placenta, what would NOT be recommended

- Ergometrine as tetanic contractions may delay placental expulsion
- Prostaglandin E2 alpha (dinoprostone)
- Oxytocin IV infusion to assist the birth of the placenta
- Use of umbilical vein for oxytocin injection

4T assessment: Thrombin

Vivienne's uterus has lost tone and she is very cold (temperature 35.4 ^{O}C). You note oozing from her IV site and haematuria in the urinary catheter bag.

What are basic principles of coagulopathy management?

- Communicate clearly with the lab about situation and requirements
- If available, use ROTEM® or TEG® guided replacement strategy
- Monitor baseline bloods
- Avoid hypothermia and acidosis
- Correct hypocalcaemia
- Be alert for early DIC

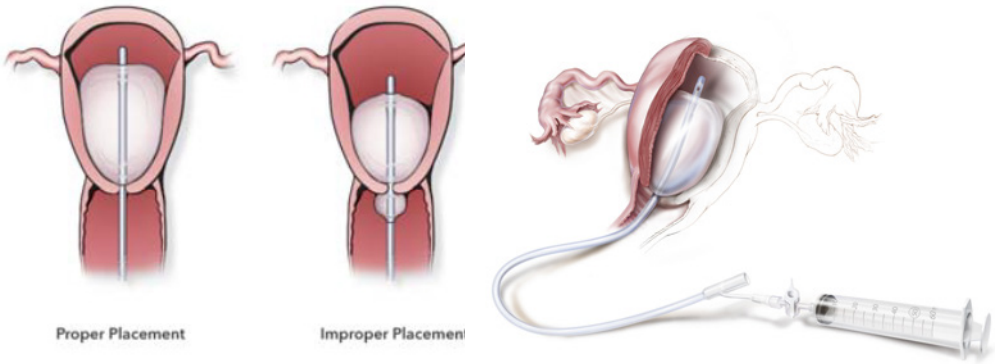
Consider coagulation profile concurrently with other assessments.

Medical and surgical options

A student asks you what else can be done for Vivienne if the bleeding can't be stopped.

What medical procedures would you identify?

- Bimanual compression
- Intrauterine balloon tamponade (e.g. Bakri)
- Selective angiographic embolisation



What surgical procedures would you identify?

- Aortic compression as a temporising measure (below level of renal arteries)
- B-Lynch compression suture
- Bilateral uterine artery ligation
- Bilateral utero-ovarian artery ligation
- If expertise available, bilateral iliac artery ligation
- Hysterectomy

Massive Haemorrhage Protocol

A Massive Haemorrhage Protocol (MHP) is activated. Your facility does not have a point of care blood clotting analyser (ROTEM® or TEG®). There is emergency O negative blood and 4 g of fibrinogen concentrate. Access to other resources is delayed.

How will you prioritise fluid administration?

Give as you have available:

1. Red Blood Cells O negative or group specific (2 units)
2. Fibrinogen concentrate (4 g)
3. Platelets one adult dose
4. FFP 2 units
5. Crystalloids < 2 L
6. Colloids < 1.5 L

What other measures will you take given your limited resources?

- Provide ongoing care as for resuscitation
- Ensure tranexamic acid given
- Keep Vivienne warm/warm all fluids
- Contact RSQ (if required)
- Seek other assistance (e.g. haematologist advice)
- Use point of care pathology if available (i-STAT, Hemocue)

Postnatal haemoglobin

Vivienne stabilises quickly, blood loss settles and the MHP is deactivated. Transfer to another facility is not required

How will you advise Vivienne about her Hb?

- Check 6 hours after stabilisation and repeat within 24 hours
- If < 70 g/L and/or symptomatic offer RBC transfusion
- If < 70 g/L and asymptomatic offer parenteral iron therapy
- If 70–90 g/L and asymptomatic, offer parenteral iron therapy or oral therapy with vitamin C supplementation
- How to increase dietary iron

Postnatal care after PPH

Vivienne recovers well and will be ready for discharge soon.

What postnatal care is indicated for Vivienne?

- Monitor at least 4 hourly for 24 hours (vital signs, uterine tone, blood loss)
- Leave IV access in situ for 24 hours
- VTE prophylaxis—risk increased following PPH
- Support mother/baby interactions (breastfeeding, skin-to-skin care) as fatigue possible due to anaemia

What preparation for discharge is indicated (additional to usual)?

- Offer debriefing before discharge and at 6 weeks postpartum
- Discuss emotional responses (e.g. risk of depression with anaemia)
- Supports available in community
- Discharge letter/contact with GP
- Advise of signs and symptoms for self-referral to GP (e.g. bleeding, infection, depression, VTE)
- Advise of risk of PPH in subsequent pregnancies