L09: Postpartum Hemorrhage

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Introduction

Postpartum hemorrhage is defined as a cumulative blood loss greater than 500 mL, or bleeding associated with signs and symptoms of hypovolemia in the first 24 hours following birth. It is an obstetric emergency, and one of the top five causes of maternal mortality; the loss of blood can be significant, as the uterine artery blood flow at term can be as high as 750 mL/minute and can account for up to 15% of cardiac output.

Causes of postpartum hemorrhage include the "Four Ts":

- Tone (uterine atony, the most common cause)
- Trauma (to genital structures)
- Tissue (retention of placenta or membranes)
- Thrombin (coagulopathy)

Patients at higher risk of postpartum hemorrhage include women with multiple pregnancies (more than four), a past history of postpartum or antepartum hemorrhage, and a large baby.

Normally, the fundus will not become firm and contracted until the placenta is delivered. Avoid fundal massage prior to placental delivery, and continue checking for vaginal bleeding while observing vital signs.

Essentials

- Assess for fundus tone, visible blood loss, and perineal or vaginal lacerations.
- Quantify blood loss: use abdominal pads to collect blood and calculate weight difference on hospital arrival. With uterine atony, blood loss can be significantly greater than what is observed externally. Look for signs of hypovolemia closely.
- In an unstable patient, assess vital signs and shock index, and treat as per CPG D01: Shock

Additional Treatment Information

- Fundus firm: provide high-flow oxygen, correct hypvolemia with up to 40 mL/kg normal saline, and administer tranexamic acid while en route. Manage visible lacerations with direct pressure and dressings.
- Fundus not firm: provide uterine massage (firm pressure in a circular motion with a cupped hand). Consider administration of uterotonic drugs (oxytocin, Hemabate).
  - Encourage mother to empty bladder if possible. A full bladder will impede and prevent contractions of the uterus, which will prevent uterine emptying, exacerbating blood retention, atony, and hemorrhage.
  - Encourage baby to suckle breast
  - Do NOT attempt delivery of placenta due to risk of uterine inversion

Referral Information

Transport rapid to a hospital with obstetrical and surgical facilities is preferred. Contact CliniCall for additional guidance.

General Information

- In most cases, postpartum hemorrhage is a malfunction of one of the body's mechanisms of utertine bleeding control; these include myometrial contraction causing direct compression of the blood vessels, and local hemostatic factors that promote clotting.

- If bleeding remains uncontrolled despite oxytocin, hemabate, and tranexamic acid, surgical intervention is likely to be required.

Interventions

First Responder

- Provide supplemental oxygen
  - → A07: Oxygen and Medication Administration

Emergency Medical Responder – All FR interventions, plus:

- Keep patient warm and prevent heat loss
- Notify hospital while en route
- Provide analgesia if required:
  - → E08: Pain Management
  - Nitrous oxide
- Consider ACP intercept

Primary Care Paramedic – All FR and EMR interventions, plus:

- Obtain vascular access and correct hypoperfusion:
  - → D03: Vascular Access
  - 2 large-bore IVs preferred
  - Resuscitate to perfusion or mentation with warmed IV fluids where possible
- Antifibrinolysis:
  - Tranexamic acid

Advanced Care Paramedic – All FR, EMR, and PCP interventions, plus:

- Consider advanced airway management only if necessary
- Consider analgesia
  - → E08: Pain Management

Critical Care Paramedic – All FR, EMR, PCP, and ACP interventions, plus:

- Consult OB/GYN for choice of uterotonic medications and further treatment
- Advanced diagnostics if in remote ER setting (ultrasound, CBC, type and screen, lactate)
- Consider blood products
- Reverse anticoagulation
- Insert Foley catheter
- Consider laparotomy by local surgeon as a temporizing measure if OB/GYN not available

References

1. Ambulance Victoria. Clinical Practice Guidelines: Ambulance and MICA Paramedics. 2018. [Link]
2. Roberts I, et al. The CRASH-2 trial: A randomised controlled trial and economic evaluation of the effects of tranexamic acid on death, vascular occlusive events and transfusion requirement in bleeding trauma patients. 2013. [Link]
3. WOMAN Trial Collaborators. Effect of early tranexamic acid administration on mortality, hysterectomy, and other morbidities in women with post-partum haemorrhage (WOMAN): An international, randomised, double-blind, placebo-controlled trial. 2017. [Link]