

# L09: Postpartum Hemorrhage

Alex Kuzmin

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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 within 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 to check for vaginal bleeding while observing vital signs. In cases of postpartum hemorrhage prior to placental delivery, consider performing fundal massage as increased uterine tone can promote placental separation and potentially decrease postpartum hemorrhage.

## Essentials

- Assess for fundal 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 is firm: provide high-flow oxygen; correct hypovolemia with up to 40 mL/kg normal saline; administer tranexamic acid while en route. Manage visible lacerations with direct pressure and dressings.
- Fundus is not firm: provide uterine massage (firm pressure in a circular motion with a cupped hand).
  - 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 infant to suckle breast
  - The placenta should naturally deliver on its own within 30-60 minutes; manipulation is not authorized
  - Do NOT attempt active delivery of placenta due to risk of uterine inversion

## Referral Information

Conveyance to a hospital with obstetrical and surgical facilities is preferred. [Contact ClinCall for additional guidance.](#)

## General Information

- In most cases, postpartum hemorrhage is a malfunction of one of the body's mechanisms of uterine 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 or carboprost/Hemabate and tranexamic acid, surgical

intervention is likely to be required.

## Interventions

### First Responder

- Provide position of comfort for patient
- Keep patient warm and prevent heat loss
- Provide supplemental oxygen
  - → [A07: Oxygen Administration](#)

### Emergency Medical Responder – All FR interventions, plus:

- Notify hospital while en route
- Provide analgesia if required
  - → [E08: Pain Management](#)
    - [Nitrous oxide](#)
- Consider intercept with additional resources

### 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
- In cases of postpartum hemorrhage and shock, consider anti-fibrinolytic therapy
  - [Tranexamic acid](#)
  - [ClinCall consultation required](#) prior to administration of 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
  - [Call ETP prior to blood product](#)
- Reverse anticoagulation
  - [Call ETP prior to blood product](#)
- 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. [\[Link\]](#)

