

POST-PARTUM HEMORRHAGE (PPH)

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PRESENTING COMPLAINT: Symptoms of acute blood loss within 24 hours of delivery (acute) or up to 12 weeks postpartum (delayed).

FINDINGS

- **A** Check airway
 - **B** ↑RR
 - **C** ↑HR, ↓BP, weak pulse
 - **D** Variable altered (V,P,U,D)*
 - **E** variable (vaginal bleeding, uterine atony, cervical or vaginal laceration, retained intrauterine tissue etc)
 - **U_{PC}** pelvic free fluid may be present in uterine rupture
 - **L_{PC}** low hemoglobin, hyperkalemia, hypocalcemia
- Other labs: coagulopathy

*V (verbal), P (pain), U (unconsciousness), D (delirious)

U_{PC} (point of care ultrasound) L_{PC} (point of care labs)

OTHER HISTORY

- **Risk factors:** Placenta previa; Abruptio placentae; Placenta accreta; Maternal obesity; Macrosomia/multiple pregnancy; Advanced maternal age; Previous post-partum hemorrhage; Operative delivery; **Risk factors of uterine atony:** High parity; prolonged labor; use of agents that cause uterine relaxation (nitroglycerine, magnesium sulphate; β₂-agonists); Prolonged use of oxytocin during labour; Chorioamnionitis; Over-stretched uterus (uterine fibroids, macrosomia/polyhydramnios, multiple pregnancy)
- **Aetiology of PPH (the 4 Ts):** Tone-uterine atony; Tissue-retained placenta/placenta accrete; Trauma-genital tract trauma; Thrombosis-coagulopathy

2) DIAGNOSTIC INTERVENTIONS

- **Initial evaluation of post-partum haemorrhage**
 - focused medical/obstetric history to rule out any potential causes of PPH;
 - Examination to assess uterine tone and to rule out genital tract trauma or retained placenta.
- **Evaluation of the patient's haemodynamic state:**
 - Blood loss (Notoriously difficult postdelivery),

- Heart rate
- Blood pressure(invasive/noninvasive)
- Mentation
- Capillary refill/tissue turgor
- Urine output, urea/electrolytes and creatinine concentration
- Complete blood count , coagulation profile, type and crossmatch, Acid-base status/lactate concentration, gas exchange

2) THERAPEUTIC INTERVENTIONS

● Commence fluid /blood products resuscitation immediately

- Organization and early intervention are key to a successful outcome of PPH
- Early communication with senior obstetric, anaesthetic, haematology (and blood bank), intensive care personnel, midwives and operating theatre staff is essential
- Initial patient evaluation and management should follow the “ABCDE” approach with early establishment of large bore intravenous access and immediate commencement of fluid resuscitation

● Examine again to determine/immediately treat the cause of PPH (birth canal and explore uterine cavity)

- If uterine atony is the predominant cause of PPH, Fundal massage (rubbing up a contraction) and/or bimanual compression (with the other hand in the vagina) to compress the uterus may slow down blood loss while pharmacological therapies are considered and/or the patient is transferred to the operating suite for definitive management.

● Medications:

- Oxytocin: Synthetic forms of oxytocin are the first line pharmacological agents in prevention and treatment of the atonic uterus. Oxytocin is administered in bolus form, up to 10 IU and also as an infusion usually at a rate of 10 IU/hour.
- Ergometrine: Parenteral administration of ergometrine (0.2mg) results in α -adrenergic stimulated contraction of uterine smooth muscle. Concomitant use with oxytocin will result in synergistically increased uterine tone.
- Carboprost: 15-methy prostaglandin F-2 α (carboprost) may be give intramuscularly or intramyometrially and may be administered in cases unresponsive to oxytocin and ergometrine. It should be administered in doses of 0.25 mg intermittently up to a maximum dose of 2.0 mg
- Other pharmaceutical agents include: Misoprostol, Tranexamic acid, recombinant activated factor VIIa, RiaSTAP (fibrinogen concentrate), et al.

● Consider surgical interventions (balloon tamponade, B lynch or other sutures, utero-ovarian artery ligation, hysterectomy)

- In cases of uterine atony where blood loss is massive, early consideration of surgical management is important while resuscitation and pharmacological management is ongoing.

- Surgical management: Uterine balloon tamponade; B-lynch sutures; external tamponade of bleeding uterine vessels; proximal arterial ligation; embolization; et al.
- In cases of extreme haemodynamic instability, the aorta may be compressed by the application of external epigastric pressure applied until patient transfer to the operating theatre. Intra-operatively the aorta may be clamped as a temporizing measure in order to optimize fluid and blood product resuscitation.
- Hysterectomy is usually a last resort to control life-threatening haemorrhage that cannot be managed with other pharmacological and surgical approaches. It may be considered earlier in those patients who have completed their family or where transfusion options are limited (e.g. presence of antibodies/patient refusal of transfusion).

REFERENCES AND ACKNOWLEDGMENT

Acknowledgment: *Hajrunisa Cubro, MD*

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[https://www.uptodate.com/contents/overview-of-postpartum-hemorrhage?search=POST-](https://www.uptodate.com/contents/overview-of-postpartum-hemorrhage?search=POST-PARTUM%20HEMORRHAGE&source=search_result&selectedTitle=1~150&usage_type=default&display_rank=1)

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