Procedure

Postpartum Haemorrhage - Immediate and Ongoing Postnatal Care after Major PPH

1. Purpose

This document outlines the procedure details for the immediate and ongoing postnatal care of women who have had a major PPH at the Women's.

This procedure is related to the Postpartum Haemorrhage guideline, Observations – Birth Centre – Adult Escalation Criteria and Response Framework procedure, Massive Transfusion – Alfred guideline and the Transfer to Tertiary – W@S guideline.

Where processes differ between campuses, those that refer to the Sandringham campus are differentiated by pink text or have the heading **Sandringham campus**.

2. Definitions

Primary postpartum haemorrhage (PPH) is traditionally defined as blood loss > or = 500 mL, within 24 hours of delivery [6].

Secondary PPH is defined as a blood loss of >500mL after 24hours and up to 6 weeks postpartum [6].

A major PPH is defined as such when there is continued bleeding and failure to respond to first-line management and cases where blood loss is approaching or exceeding 1000mL[6].

DIC: Disseminated intravascular coagulation.

Bakri balloon is a balloon tamponade indicated for women not responding to uterotonics and uterine massage. It is used to control haemorrhage due to uterine atony in the upper segment of the uterus and to control bleeding in the lower uterine segment secondary to placental implantation in the lower uterine segment. See procedure 'Postpartum Haemorrhage - Bakri Balloon Tamponade' for more information.

Hypovolaemic shock is a life-threatening condition in which reduced circulatory volume results in inadequate tissue perfusion. In the early phases of haemorrhage, the body compensates for blood loss by raising systemic vascular resistance in order to maintain blood pressure and perfusion to vital organs. Clinically, this corresponds to a narrowing of the pulse pressure. As bleeding continues, however, further vasoconstriction is impossible, resulting in decreased blood pressure, cardiac output, and end-organ perfusion. Compensatory homoeostatic mechanisms are activated, including vasoconstriction, increased cardiac activity, reduced fluid excretion and increased platelet numbers. Blood flow to the heart, brain and adrenal glands is optimized at the expense of other organs. When persistent, irreversible cell damage occurs, and falling myocardial perfusion leads to a vicious cycle of myocardial failure and death. The clinical signs are delayed in newly parturient women due to the increased blood volume of pregnancy. By the time these vital signs are abnormal the woman will have lost at least 1500mL.

B-Lynch suture: uterine compression sutures running through the full thickness of both uterine walls (posterior as well as anterior) for surgical management of atonic PPH. The B-Lynch suturing technique (brace suture) is useful because of its simplicity of application, life-saving potential, relative safety and capacity for preserving the uterus and subsequent fertility. The adequacy of haemostasis can be assessed both before and immediately after application of the suture. This technique is an alternative to major surgical procedures for controlling pelvic arterial pulse pressure or hysterectomy. It has been shown, when applied correctly, to be successful with no problems and no apparent complications. Only if it fails, need other more radical surgical methods be considered[16].

3. Responsibilities

Midwifery staff are responsible for the midwifery care of the woman.

Medical staff are responsible for the medical management of the woman.

Sandringham - Blood product support for bleeding patients is provided by the Alfred Pathology Service. All major PPH should be notified to the Alfred Hospital Blood Bank and the Laboratory Haematologist on call (03 9076 3100).

4. Procedure

4.1 On-going management

Consideration must be given to the most appropriate environment for on-going care, particularly in cases of major PPH. This may be a high dependency unit where one-to-one nursing/midwifery care can be achieved or in a more highly specialised intensive care unit. Transfer should be anticipated and initiated early with effective and regular communication with the receiving unit[6].

- A named midwife is allocated to provide one-to-one care
- The on-call medical team liaises regularly with the midwife regarding the woman's ongoing medical care
- A plan of care is documented in the woman's medical notes
- Signs and symptoms to be reported to medical staff are identified and documented
- The woman is cared for in an environment that allows one-to-one care.

4.2 Observations during the first hour after control of bleeding

Cardiovascular system:

- Blood pressure,pulse and respiratory rate, fundal tone and position and vaginal loss are recorded every 15 minutes
- As visual estimations of blood loss are notoriously inaccurate, assess blood loss by weighing all perineal pads hourly. The ongoing measured blood loss is tallied and documented on a fluid balance chart
- Observe lochia for clotting and IV insertion sites for bleeding to identify development of disseminated intravascular coagulation (DIC)
- Continual blood loss (preferred term to 'trickling') is reported to medical staff together with total estimated blood loss
- If the estimated blood loss is greater than 1500mls or the woman is symptomatic, pulse oximetry is recorded half hourly. Readings less than 90 are reported to medical staff. A MET call is to be activated as determined by vital signs.
- Monitor temperature to avoid hypothermia. Use warm blankets or space blanket as necessary
- Be alert to over-warming as this can lead to peripheral vasodilation and contribute to hypotension
- Observe the woman's level of consciousness.
  - Mental disturbance and restlessness are features of worsening shock
- Observe for signs of hypovolaemic shock

Clinical manifestations of Hypovolaemic shock	
Low blood pressure	Shivers/Cold
Anxiety/ Confusion/Delirium/ Decreased level of consciousness	Pale and clammy
Shortness of breath/ Air hunger/ Hyperventilation	Appetite for salty food
Restlessness	Thirst
Palpitations/ Tachycardia	Decreased urine/ Anuria/ Oliguria

- Observe for side effects of uterotonics

Side effects from uterotonics	
Headache (Carboprost, misoprostol)	Nausea and vomiting (oxytocin, ergometrine, Carboprost, misoprostol) Water intoxication (oxytocin)
Hypertension (ergometrine)	Diarrhoea (Carboprost, misoprostol
Hypotension (ergometrine,rarely)	Flushing (Carboprost, misoprostol)

	Chills (Carboprost, misoprostol)

- Blood product transfusions are managed as per the Blood Transfusion Administration Guideline (Adult) and the Blood Components – Storage, Supply, Access and Documentation, Includes Emergency Supplies – Alfred guideline.

Respiratory system:

- Pulse oximetry is useful for the rapid assessment of changes in pulse rate and oxygen saturation, particularly to assess response to therapy
- Commence oxygen therapy as prescribed via facemask or nasal prongs
- Observe the woman for muscle fatigue. Muscular weakness is one of the earliest symptoms of shock. It is associated with severe and rapid fatigue whenever the woman attempts to use her muscles. This is due to lack of oxygen, and lactic acid accumulation in the muscle.

Renal system:

- Fluid balance requires strict observation of input and output via indwelling urinary catheter and Uri- meter

Signs and symptoms of acute renal failure **Renal tubules become ischaemic due to reduction in blood supply leading to acute renal failure exhibited as:**
rising serum urea and creatinine levels, and/or
oliguria of less than 400 ml/24 hours, and/or
hyperkalaemia and/or hyponatraemia
metabolic acidosis, and/or uraemic symptoms of drowsiness, nausea, hiccough and twitching

- Oliguria is defined as a urinary excretion rate of less than 0.5 ml/kg/hour, often averaged out to less than 30 ml/hour. Hourly urine volumes are recorded. If diuresis falls below 30mls per hour, inform medical staff
- Observe for signs of uraemia : drowsiness, nausea, hiccough and twitching
- Urinalysis for haematuria.

Investigations:

- Haematology: Blood group and antibody screen, FBE (particularly Hb and platelets) and coagulation screen for activated partial thromboplastin time (APTT), INR and fibrinogen are done immediately after control of the haemorrhage and repeated at intervals according to ongoing bleeding at least 6hrly thereafter
- Biochemistry: Regular evaluation of urea, creatinine and electrolyte levels and liver function tests (LFTs).

Increased potassium and decreased sodium may be indicative of renal function compromise.

Note the urea: creatinine ratio. The urea concentration will proportionately increase to the creatinine in renal failure.

Uterine packs:

- Packing of the uterus with gauze may be considered to suppress continual bleeding. The IDC remains insitu until the pack is removed
- Consider insertion of Bakri Balloon
- The fundal height is monitored carefully in this situation in case of concealed bleeding
- Theatre facilities are available when the pack/Bakri Balloon is removed
- Fast until removal of balloon tamponade in case of need to return to theatre
- See procedure 'Postpartum Haemorrhage - Bakri Balloon Tamponade' for management of women with a Bakri balloon in situ.

Thromboprophylaxis:

- Excess blood loss and blood transfusion are risk factors for venous thromboembolism (VTE). Thromboprophylaxis is commenced or reinstituted as soon as the immediate risk of haemorrhage is reduced
- TED stockings are recommended for women on bed rest. This is particularly important if the woman has multiple risk factors for thrombosis (see table 5)
- Encourage leg and foot exercises whilst on bed rest.

Personal care:

- Women who have experienced PPH of > 1litre or are symptomatic of the blood loss require bed rest and bed-bathing
- Assist mother with care of the baby, being mindful that significant blood loss will affect breast milk production.

4.3 Ongoing postnatal care

- Hour 2 from control of bleeding

If the observations are within stated limits as determined by the obstetrician, the frequency of BP and maternal heart rate can be deceased to half hourly.

- Hours 3-12 from control of bleeding

If the observations are within stated limits as determined by the obstetrician, the frequency of BP and P can be decreased to hourly.

- 12 hours from control of bleeding

If the bleeding is minimal and all other observations are within normal limits, decrease observations to 2hrly for the next 6 hrs.

Check FBE and coagulation screen.

If diuresis normal, remove the uri-meter and commence free drainage.

- 24 hours

If previous observations and diuresis are normal, IDC is removed.

If fluids are tolerated and blood results are satisfactory, IVI is removed after discussion with medical staff.

If the woman is asymptomatic, normalise postnatal care.

Women who are symptomatic require ongoing midwifery care and assistance to care for the baby.

Ensure urinary competence after removal of IDC (refer to Bladder Management – Intrapartum and Postpartum).

- 24-48 hours

Check FBE at 48hrs or before discharge.

Ensure prescription for iron supplements are provided.

Ensure postnatal debriefing by midwife or medical staff involved.

Ensure on-going psychological support as necessary.

Advise LMO follow-up and FBE check at 6 weeks.

5. Evaluation, monitoring and reporting of compliance to this procedure

Compliance to this guideline will be monitored, evaluated and reported through the notification of clinical incidents on VHIMS and by monthly clinical audit of PPHs greater than 1500mLs.

6. References

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7. Legislation related to this procedure

Not applicable.

8. Appendices

Appendix 1 – Postnatal Care: Major PPH Flowchart

Appendix 1

Postnatal Care: Major PPH Flowchart

Postnatal care: major PPH

Considerations

- Named midwife/nurse
- Named medical liason
- Documented plan of care
- Identify and document signs and symptoms to be reported
- Environment one-to-one care

First hour after control of bleeding

Cardiovascular observations

- BP, MHR, fundal tone, height and position, vaginal loss every 15 minutes
- Temperature half-hourly
- Weigh perineal pads and tally ongoing blood loss
- Observe lochia for signs of DIC
- Report ongoing blood loss- including 'trickling'
- Manage administration of blood products as per procedure

Respiratory observations

- Pulse oximetery if EBL >1500mL, half hourly.
  Report readings less than 90
- Observe for side-effects of uterotonics
- Observe level of consciousness
- Observe for signs of muscle fatigue

Renal system observations

- Observe strict fluid balance, including oliguria.
  Report output less than 30mL/hour
- Urinalysis for haematuria

Pathology investigations

- FBE- Hb and platelets
- Coagulation screen- APTT and INR, Fibrinogen
- Urea, creatinine and electrolytes, liver function tests

Thromboprophylaxis

- Medication as ordered
- TED stockings
- Encourage leg and foot exercises

Personal care

- Bed rest
- Bed bathing
- Assistance with baby care and breast-feeding
- Consider number of visitors
- Consider analgesic needs

Second hour after control of bleeding

- Cardiovasular, respiratory and renal observations continue.
- If BP and MHR stable and within specified limits, frequency can be reduced to half hourly

Hours 3 to 12 hour after control of bleeding

- Cardiovasular, respiratory and renal observations continue.
- If BP and MHR stable and within specified limits, frequency can be reduced to hourly

12 hours after control of bleeding

- Cardiovasular, respiratory and renal observations continue.
- If BP and MHR stable and within specified limits, frequency can be reduced to 2 hourly for the next 6 hours
- Check FBE abd coagulation screen
- If diuresis normal, remove the urimeter and commenced free drainage

24 hours after control of bleeding

- If observations and diuresis normal, remove IDC
- If fluids tolerated and blood results satisfactory, remove IVI
- If woman asymptomatic, normalise postnatal care
- If the woman is symptomatic continue to provide care and assistance with baby as required
- If diuresis normal, IDC can be removed
  ensure urinary competence after removal

24-48 hours after control of bleeding

- Check FBE at 48 hours
- Ensure script for iron supplements
- Ensure postnatal debriefing by midwife/medical staff involved
- Ensure ongoing psychological support as necessary
- Advise LMO follow-up and FBE check at 6 weeks