South Australian Perinatal Practice Guidelines

Secondary Postpartum haemorrhage

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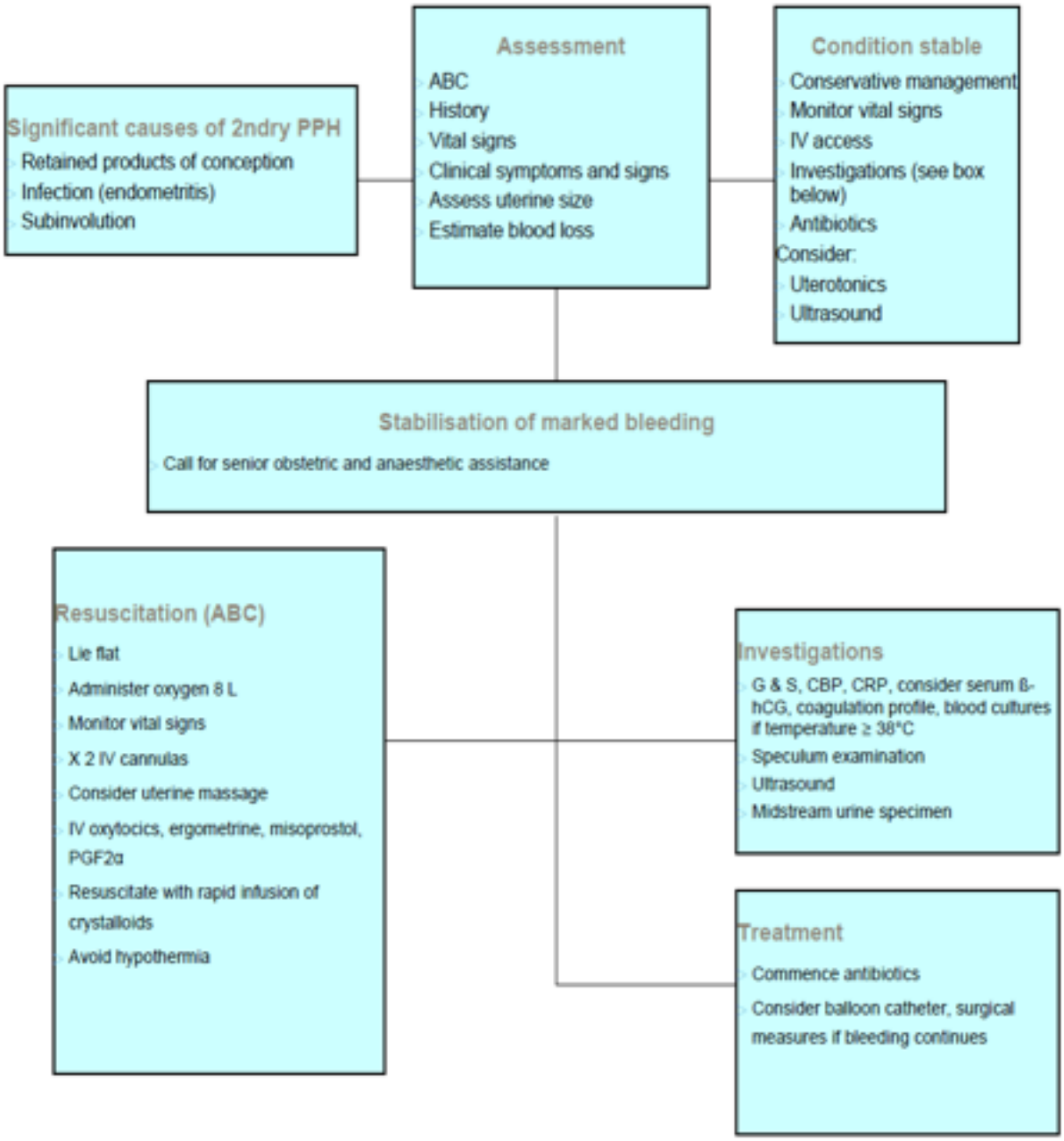
Secondary PPH flow chart



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Introduction

- In developed countries, secondary postpartum haemorrhage (PPH) occurs in < 1 to 2 % of pregnancies
- The pathogenesis is thought to be diffuse uterine atony or subinvolution of the placental site secondary to retained products of conception and / or infection in the uterus; however, the underlying cause is often not established (Alexander et al. 2002; ACOG 2006; Ambrose and Repke in James et al. 2011)
- **Women with delayed PPH often have retained placental fragments,** especially if the bleeding is heavy (Ambrose and Repke in James et al. 2011)

Definition

- Secondary postpartum haemorrhage is defined as abnormal or excessive bleeding from the vagina between 24 hours and 12 weeks after giving birth (Alexander et al. 2002)
- As this definition includes no reference to the volume of blood loss or the condition of the woman, the spectrum of the condition can vary from inconvenience to fatal. The extent of bleeding usually is less than that seen with primary PPH (Alexander et al. 2002)

Causes

Abnormalities of placentation

- Subinvolution of the placental site
- Retained products of conception
- Placenta accreta

Infection

- Endometritis, myometritis, parametritis
- Infection or dehiscence of caesarean scar

Pre-existing uterine disease

- Uterine fibroids (leiomyomata)
- Cervical neoplasm (rare)
- Cervical polyp
- Uterine arteriovenous malformation (rare)

Trauma

- Missed vaginal lacerations and haematomas e.g. ruptured vulval haematoma (may be associated with operative delivery)

Coagulopathies

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- Congenital haemorrhagic disorders (von Willebrand's disease, carriers of haemophilia A or B, factor XI deficiency)
- Use of anticoagulants (e.g. warfarin)

Diagnosis

- Secondary PPH is a clinical diagnosis of exclusion, which may present as slight to heavy bleeding (and rarely hypovolaemic shock) usually 7 to 14 days after birth (King et al. 1989; Ambrose and Repke in James et al. 2011)
- Small amounts of bleeding may persist for several weeks and therefore some bleeding defined as a secondary PPH may be normal
- Bleeding may also represent the initial menstrual period after childbirth, (result of an anovulatory cycle) and may be heavy, painful and prolonged.
- The time frame for secondary PPH also encompasses the period when contraception is commenced and vaginal bleeding is a common side effect of hormonal contraception.
- Check history for complications in previous pregnancies which may reflect aberrant maternal-trophoblastic interaction e.g. preeclampsia, IUGR, spontaneous miscarriage and especially retained placenta (retained products are more common in such women)
- Suspect endometritis if the history includes uterine tenderness, fever or foul smelling lochia
- Secondary PPH in the first week may be related to coagulopathy, especially von Willebrand's disease
- Small amounts of bleeding in the absence of signs and symptoms of endometritis or retained products may require no treatment and could be regarded as a normal variant

Management

- There are no randomised controlled trials to inform the management of women with secondary postpartum haemorrhage
- The pragmatic approach is stabilisation, investigation to establish a cause for the bleeding and appropriate treatment
- The initial treatment mainstays are administration of uterotonic agents, antibiotics and consider need for surgical intervention if bleeding is heavy and ongoing e.g. urgent evacuation of the uterus (Aiken et al. 2011)
- In most cases, endometritis can be effectively treated with antibiotics without surgical intervention (dilation and curettage)
    - If curettage is recommended, aim to give antibiotics for 24 hours before the procedure (unless bleeding requires earlier intervention)

Assessment

- Obtain detailed history including parity, labour, mode of delivery, third stage and puerperal complications

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- Check temperature, pulse and blood pressure
- Assess uterine size
- **Clinical symptoms and signs** may include bleeding per vagina (may be offensive), abdominal cramping, uterine tenderness, pyrexia and enlarged uterus
    - In women with pyrexia, exclude other sources of infection e.g. mastitis, urinary tract infection or septic pelvic thrombophlebitis
- Assess clinical signs of blood loss (perfusion and hydration) and compare with estimation of blood loss
- Speculum examination – check status of cervical os and obtain endocervical swab
- Establish intravenous access using 16 gauge cannulae and commence resuscitation as indicated (see stabilisation of marked bleeding below)
- Commence oxygen via face mask as indicated

Investigations

- Group and save serum. Cross match 2-4 units red blood cells if marked bleeding
- Complete blood picture
- C-reactive protein
- Serum ß-hCG may be helpful to distinguish between trophoblastic disease and retained placental tissue or other causes when ultrasound is not informative
- Coagulation profile as indicated
- Midstream urine specimen if signs of infection
- Take blood cultures if temperature ≥ 38°C
- Speculum examination and HVS, LVS as above

Ultrasound

- Ultrasound should be considered if there are concerns of retained placental tissue
    - Ultrasound is useful to identify clot or other debris in uterine cavity and subinvolution
    - Real time or colour Doppler ultrasound may not differentiate placental tissue from blood clots, but it may show an empty uterus
    - On colour Doppler ultrasound, the rare uterine arteriovenous malformation appears as a hypervascular lesion with turbulent flow within the myometrium
- Administration of uterotonics (see below) if clot or other debris > 2cm is demonstrated in the cavity may reduce the rate of surgical intervention

Antibiotics

- All patients with suspected retained products require antibiotic cover because there is always an element of infection in these circumstances
- Give intravenous antibiotics if the woman is febrile and oral antibiotics if afebrile but endometritis is suspected. Continue until a diagnosis is made or symptoms subside

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Intravenous

- Ampicillin (or amoxycillin) 2 g IV initial dose then 1 g IV every 4 hours and
- Gentamicin 5 mg / kg IV daily and
- Metronidazole 500 mg IV every 12 hours

Allergy to penicillin

- Lincomycin 600 mg IV in 100 mL over 1 hour every 8 hours and
- Gentamicin 5 mg / kg IV daily

Oral

- Augmentin Duo Forte (amoxycillin 875 mg / clavulanic acid 125 mg) every twelve hours for five days

Uterotonics

- Administer bolus dose of one of the following:
  - Intravenous or intramuscular Syntocinon® 10 IU
  - Intramuscular Syntocinon® 5 IU in combination with ergometrine maleate 0.5 mg (Syntometrine®)
  - Ergometrine 500 micrograms in 1 mL. Intramuscular dose: give 250 micrograms; Intravenous dose: give 25-50 microgram bolus and can repeat after 2-3 minutes (see PPG 'Ergot derivatives prophylaxis for 3rd stage management and PPH')
- Prepare and commence an oxytocin infusion (40 IU Syntocinon® in 1,000 mL Hartmann's solution or sodium chloride 0.9 %) (see PPG 'Syntocinon® infusion regimen for PPH')
- Consider Cytotec® (Misoprostol available as tablets 200 micrograms) 800 micrograms per rectum or Cervagem® (gemeprost) 1 mg per rectum or intramyometrial prostaglandin F2α
  - Misoprostol may be useful to help the uterus expel products of conception that are not adherent to the uterine wall such as blood clots

Condition stable

- Admit for conservative management with bed rest and intravenous antibiotics as above
- Adherent material – If the woman's condition is stable, after discussion with a senior registrar / consultant, conservative management (bed rest and IV antibiotics) may be an option (see retention of abnormally adherent placenta in PPG 'Postpartum haemorrhage')
- Investigations as above

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- If bleeding has not settled after 24 hours of antibiotic treatment, consider surgical intervention (EUA and curettage)

Stabilisation of marked bleeding

Evidence of shock suggests severe sepsis requiring urgent intervention

- Call for obstetric and anaesthetic assistance
- Consider uterine massage to expel any clots
- Administer oxygen via face mask
- Lay the woman flat
- IV access x 2 using 16 gauge cannulae
- Resuscitate with appropriate IV fluid, e.g. sodium chloride 0.9 %, Hartmann's solution (crystalloids) or Gelofusine® (gelatin – based colloid). When using crystalloid, the ratio of resuscitative IV fluid required to blood lost is 3:1
  - To resuscitate more quickly, administer IV fluids using a pressure infusion device
  - Consider use of blood warmer and hot air blanket to avoid hypothermia
  - Avoid hypotension by adequate fluid replacement in relation to ongoing measured blood loss
- Close observations including pulse, blood pressure, respirations, SpO_2, capillary refill and urine output
- Investigations as above

Uterotonics

- Administer bolus dose of Syntocinon® 10 IU IV
- Prepare and commence an oxytocin infusion (40 IU Syntocinon® in 1,000 mL Hartmann's solution or sodium chloride 0.9 %) (see PPG 'Syntocinon® infusion regimen for PPH')
- Consider Cytotec® (Misoprostol available as tablets 200 micrograms) 800 micrograms per rectum or Cervagem® (gemeprost) 1 mg per rectum or intramyometrial prostaglandin F2α
- Consider insertion of balloon catheter in cases of continuing haemorrhage (see PPG 'Balloon tamponade and uterine packing for major PPH')
- Consider surgical intervention if unresponsive to medical management

Surgical management

- Surgical management may include any of the following:
  - Examination under anaesthetic
  - Under ultrasound guidance: dilatation and evacuation of products of conception and gentle suction curettage
  - Ligation of internal iliac arteries if interventional radiology is not readily available
  - Hysterectomy

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- Examination under anaesthesia (EUA) and dilatation and suction curettage is indicated for retained products of conception if detected on ultrasound
- EUA with curettage should be performed by a senior registrar / obstetrician to minimise the risk of uterine perforation and Asherman's syndrome
- Concurrent ultrasound guidance may assist in the avoidance of uterine perforation during dilatation and suction curettage and therefore minimise myometrial abrasion
- If dilatation and suction curettage is required, administer antibiotics for 6 to 12 hours before the procedure to guard against bacteraemia, unless heavy bleeding mandates urgent intervention
- It is important to avoid over vigorous curettage as this can result in Asherman's syndrome (more common with late curettage, i.e. 2 - 3 weeks postpartum, than earlier on)
- Send tissue for histopathology to exclude trophoblastic disease and confirm diagnosis
- If bleeding continues after curettage, consider need for further intervention (e.g. ligation of internal iliac arteries, hysterectomy or angiography with embolisation of the uterine arteries)
- If haemorrhage is persistent and severe in the presence of uterine arteriovenous malformation a planned uterine artery embolisation may reduce the need for hysterectomy
- 3 - 5 % of women require hysterectomy to control bleeding

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Abbreviations

ABC	Airway, breathing, circulation
ACOG	American College of Obstetrics and Gynecology
C	Celsius
CBP	Complete blood picture
CRP	C reactive protein
e.g.	For example
et al.	And others
EUA	Examination under anaesthetic
XI	Eleven
F2α	F2 alpha
g	Gram(s)
hCG	Human chorionic gonadotropin
HVS	High vaginal swabs
i.e.	That is
IV	Intravenous
IU	International units
kg	Kilogram(s)
L	Litre(s)
LVS	Low vaginal swabs
mg	Milligram(s)
mL	Millilitre(s)
PG	Prostaglandin
%	Percentage
PPH	Postpartum haemorrhage
URL	Uniform resource locator

Version control and change history

PDS reference: OCE use only

Version	Date from	Date to	Amendment
1.0	20 Sept 07	20 Mar 12	Original version
2.0	20 Mar 12	Current	

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