

Postpartum Haemorrhage - Carboprost



Immediate actions:

The primary purpose of this procedure is to arrest uterine bleeding when first and second line management of PPH has been unsuccessful.

- If in Birth Centre, administer a once-only dose of carboprost 250 micrograms (1mL) by deep intramuscular (IM) injection.
- Call the duty consultant. If further doses are required the woman must be transferred to theatre and the consultant asked to attend to manage the case.
- Be aware of contraindications, precautions and side-effects.
- Consider administering medicines to manage side-effects: ondansetron 4mg IV +/- loperamide 4mg orally, if appropriate.

1. Purpose

This document outlines the procedure details for the preparation and administration of carboprost (Hemabate®) as third line management of a major primary postpartum haemorrhage (PPH). This procedure is linked to the ['Postpartum Haemorrhage'](#) guideline and the ['Postpartum Haemorrhage: Immediate and Ongoing Postnatal Management after Major PPH'](#) procedure.

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 greater than or equal to 500 mL, within 24 hours of delivery.

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

A major PPH is defined as continued bleeding and failure to respond to first-line management and cases where blood loss is approaching or exceeding 1000mL

Carboprost tromethamine (Hemabate®) is a prostaglandin analogue used to control severe PPH caused by uterine atony that is not responsive to oxytocin, ergometrine or uterine massage.¹ Carboprost is an alternative medicine to dinoprost (Prostin F2 alpha®) which has been discontinued.

3. Responsibilities

- Obstetric and midwifery staff
- Senior medical staff (including the on-call Obstetric Consultant) are responsible for attending all cases of major PPH or on request
- Anaesthetic staff are responsible for providing and advising on clinical care in cases of major PPH when intensive monitoring and resuscitation are required
- The Haematology Consultant should be consulted early to prevent development of disseminated intravascular coagulation (DIC). For all cases of developing or actual coagulopathies, resuscitation with blood products may be required
- Other available specialists such as the Gynae/Oncology Consultant should be consulted early when bleeding is intractable, or where hysterectomy or ligation/embolisation of uterine arteries are being considered
- Pharmacists.

4. Procedure

Medicine name	Carboprost
Brand name	Hemabate®

<p>Procedure</p> <p>Postpartum Haemorrhage - Carboprost</p>	 <p>the women's the royal women's hospital</p>
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Presentation	250 micrograms in 1mL ampoules
Storage	Store in fridge: 2 to 8°C
Route of administration	<ul style="list-style-type: none"> Intramuscular (IM) injection; once–only in the Birth Centre. Repeated doses only in operating theatre. Intramyometrial injection: in operating theatre only* <p>*The manufacturer does not recommend carboprost for intramyometrial administration. However, the off-label use of this medicine is considered routine for the treatment of PPH with high quality supporting evidence.^{2, 3, 4}</p>
Restrictions	<p>Carboprost is Special Access Scheme (SAS) Category A medicine</p> <p>An SAS form must be completed by the prescribing doctor before use.</p> <p>http://www.tga.gov.au/sites/default/files/access-forms-sas-categorya-140901.pdf</p> <p>Please forward the completed SAS form the Pharmacy Department as soon as possible.</p>

4.1 Indication

Carboprost is used in the management of severe PPH due to uterine atony that is unresponsive to conventional PPH therapy i.e. oxytocin, ergometrine or uterine massage.

4.2 Contraindications

- Hypersensitivity to any component of the preparation: carboprost, tromethamine, sodium chloride, benzyl alcohol
- Patients with known active cardiac, pulmonary, renal or hepatic disease
- Acute pelvic inflammatory disease.

4.3 Precautions

Carboprost should be used with caution in women with:

- a history of hypotension or hypertension
- a history of or currently diagnosed with diabetes
- a history of anaemia
- a history of hepatic disease or jaundice
- chorioamnionitis
- a history of epilepsy
- previously compromised (scarred) uteri
- a history of glaucoma or raised intraocular pressure.

4.4 Adverse effects

- Bronchopulmonary:** bronchospasm, pulmonary oedema due to raised pulmonary artery pressures, hypoxia due to pulmonary shunting
- Cardiovascular:** acute hypertension (usually transient and requiring no treatment), acute hypotension, cardiac arrhythmia including ventricular tachycardia (rarely), flushing, syncope and palpitations
- Gastrointestinal:** abdominal cramps, diarrhoea and vomiting
- Other:** an increase in temperature greater than 1.1°C, convulsions (rarely), flushing, shivering, uterine rupture, headache (usually mild and transient).

4.5 Prerequisites

Experienced anaesthetist on standby:

- Intravenous (IV) access x 2 using 16 gauge cannulas
- Pulse oximetry and oxygen administration

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- Resuscitation equipment available.

4.6 Administration

After a vaginal birth in Birth Centre

If bleeding is intractable after administration of first and second line management in the Birth Centre, a once-only dose of carboprost 250micrograms (1mL) by deep intramuscular (IM) injection may be administered. The duty consultant must be informed. If further doses are required the woman must be transferred to theatre and the consultant asked to attend.

Administer concomittent ondansetron 4mg IV for management of side-effects (if not already administered).

If the woman is unlikely to have postnatal opioid analgesia, consider concomittent administration of loperamide 4mg orally, for management of diarrhoea.(Note: contraindicated in women with cardiac disease, long QT syndrome).

At laparotomy / LUSCS

Administer 250micrograms (1mL) by deep intramuscular (IM) injection. It may be repeated at intervals of no less than 15 minutes. The total dose should not exceed 2mg (8 doses).²

OR

Consultant decision: Infiltrate 500 micrograms (2mL) of carboprost directly into the myometrium using a 21 gauge spinal needle, aspirating intermittently to avoid direct systemic injection. Repeat 15 minutes later if necessary, to a maximum of 2mg of carboprost.³

Avoid cervical injection because of an increased risk of direct systemic uptake.

After vaginal birth and with woman in the operating theatre

Administer 250micrograms (1mL) by deep intramuscular (IM) injection. It may be repeated at intervals of no less than 15 minutes. The total dose should not exceed 2mg (8 doses).²

OR

Consultant decision: Using a 22 gauge spinal needle, inject 1mL (250 micrograms) of carboprost through the anterior abdominal wall into the myometrium on each side of the uterine fundus.

Alternatively, inject 2mL (500 micrograms) into the uterine fundus, aspirating to avoid direct systemic injection. Repeat if required to a maximum dose of 2mg.³

Ultrasound guidance may be useful.

4.7 Unsuccessful responses

Proceed to alternative management regimens which may include:

- balloon tamponade
- uterine packing
- B-Lynch suture
- uterine artery and internal iliac artery ligation
- pelvic arterial embolisation
- hysterectomy.

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

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



6. References

1. Pfizer Canada Inc. (2014) Product Information: Carboprost tromethamine injection (Hemabate ®) available at http://www.pfizer.ca/sites/g/files/g10017036/f/201410/Hemabate_PM_E_170114_21Feb2014.pdf
2. RANZCOG Management of Postpartum Haemorrhage, available at <https://www.ranzcog.edu.au/.../management-of-postpartum-haemorrhage.html>
3. RCOG Green Top Guideline no.52 (2009) Prevention and Management of Postpartum Haemorrhage, available at <https://www.rcog.org.uk/.../gt52postpartumhaemorrhage0411.pdf>
4. Queensland Clinical Guidelines Primary Postpartum Haemorrhage (2012) available at https://www.health.qld.gov.au/qcg/documents/g_pph.pdf

7. Legislation related to this procedure

Special Access Scheme: <http://www.tga.gov.au/form/special-access-scheme>

8. Appendices

Appendix 1: PPH Algorithm: Parkville

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Postpartum Haemorrhage Algorithm: Parkville



PPH Management- Parkville

