This information was up to date at the time of release to the Heads of Midwifery.
The editorial board does not accept liability for any errors or omissions following its subsequent publication.
Updating arrangements for the formulary should be decided upon and implemented at a local level.

Carboprost – Hemabate®

Legal status (GSL, P or POM on exemption list, or PGD)	▪ POM - Midwife may administer as medicine is on midwives exemptions list.
Patient group	Postnatal women with postpartum haemorrhage PPH.
Clinical indication	PPH due to uterine atony unresponsive manual procedures and oxytocin (IV), Syntometrine® (IM) or ergometrine (IV or IM) alone or combined in accordance with agreed local guideline.
Pharmacology (Onset and duration of action where appropriate)	Carboprost is a synthetic analogue of prostaglandin F2 alpha. It stimulates the uterus to contract in a manner similar to that normally observed in the uterus following delivery thereby resulting in myometrial contractions and haemostasis at the site of placentation and hence prevents further blood loss. It also affects the cardiovascular, gastro-intestinal, central nervous systems and urinary and metabolic processes, hence its adverse effects. Onset of action within 5 minutes and peak effect is variable after about 15-60 minutes and duration of action is greater than 60 minutes.
Pharmaceutical form, strength, route of administration	A sterile solution for injection containing carboprost tromethamine equivalent to carboprost 250 micrograms/ml in 1ml ampoule and 10ml vial. By deep intramuscular injection.
Dose, frequency and maximum number of doses or period of time of supply	250 micrograms (1ml) by intramuscular injection. If necessary, further doses of 250 micrograms may be administered at intervals of about 1.5 hours. In severe cases the interval between doses may be reduced at the discretion of the attending midwife, but it should not be <15 minutes. **Total dose must not exceed 2 mg (8 doses).**
Contra-indications/exclusion criteria	▪ known hypersensitivity to any component of the medicine ▪ acute pelvic inflammatory diseases ▪ known cardiac, pulmonary (severe asthma and chronic bronchitis), renal or hepatic disease

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Cautions and action that will be taken if a caution applies	▪ very rarely cardiovascular collapse has been reported ▪ use with caution in patients with a history of glaucoma or raised intra-ocular pressure, asthma, hypertension or hypotension, cardiovascular disease, renal disease, hepatic disease, anaemia, jaundice, diabetes or epilepsy ▪ compromised (scarred) uteri ▪ decreases in maternal arterial oxygen content can occur - although a causal relationship has not been established, it is advisable to monitor patients with pre-existing cardio-pulmonary problems during treatment and give additional oxygen if needed ▪ check for and document any allergies ▪ if a caution applies consult with a doctor ▪ document consultation in maternity record
Drug interactions and action that will be taken if a patient is taking a medicine that may interact	▪ potentiates effects of oxytocin ▪ refer to current BNF for latest information on interactions. ▪ if there is a clinically significant drug interaction, consult with a doctor before administration or supply ▪ document consultation in maternity record
Potential adverse reactions and side effects including actions to be taken if adverse drug reaction is suspected	▪ *adverse effects are generally transient and reversible* ▪ *common side effects are nausea, vomiting and diarrhoea - theoretically the incidence of vomiting and diarrhoea may be reduced by pre-treatment and concomitant use of anti-emetic and anti-diarrhoeal agents but this may not be pragmatic* ▪ *hyperthermia and flushing but temperature will usually return to normal within several hours of the last injection if not complicated by endometritis* ▪ *asthma and wheezing have been reported* ▪ *less frequent, but potentially more serious adverse effects include raised blood pressure especially in PIH, dyspnoea and pulmonary oedema* ▪ *other less serious adverse effects are chills, headache, diaphoresis, dizziness and injection site erythema and pain* ▪ *on labour contra-indicated* ▪ *on the neonate Nil* ▪ *on breast feeding Nil* *If a serious adverse reaction is suspected please report to the MHRA Yellow Card Scheme http://yellowcard.mhra.gov.uk/*
Overdose	▪ if evidence of excessive side-effects appears, the frequency of administration should be decreased or administration discontinued - treatment needs to be symptomatic as there is no specific antidote ▪ immediate assessment/treatment is essential - refer to medical staff ▪ management should be in accordance with established treatment guidelines or see BNF overdose section ▪ for further advice contact National Poisons Centre 0344 892 0111

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Action if patient declines	▪ refer to authorised prescriber or doctor ▪ document in maternity record
Additional advice and information	▪ contact obstetric help in accordance with local guidelines ▪ manufacturer's patient information leaflet should be supplied if requested
Patient monitoring arrangements during and after treatment and follow-up required	▪ Monitor frequency, duration, force of contractions, uterine resting tone, temperature, pulse, BP periodically throughout course of therapy. Large dose may cause hypertension. Rise in temperature may start 1-16 hours after start of therapy and last for several hours. ▪ Auscultate breath sounds. Wheezing and sensation of chest tightness may indicate hypersensitivity reaction. ▪ Assess for nausea, vomiting, and diarrhoea. Vomiting and diarrhoea occur in about two-thirds of patients. ▪ Monitor amount and type of vaginal discharge. ▪ Notify an obstetrician if symptoms of haemorrhage (increased bleeding, hypotension, pallor, and tachycardia) occur.
Particular storage requirement	▪ Store ampoule at 2-8^{o}C and 10ml vial at 0-6^{o}C. ▪ Inspect visually for particulate matter and discoloration prior to use.

References

1. Summary of Product Characteristics. Carboprost (Hemabate®), Pfizer Limited. Text revision 10.10.2013. Accessed 22.12.19 http://www.medicines.org.uk
2. http://www.bnf.org