PIPADOR REVISION

MRCOG Part 1 Revision Notes

Uterotonics

PHARMACOLOGY • LECTURE 381

VISUAL EXAMINATION REVISION NOTES

2026 Edition

MRCOG PART 1 REVISION NOTES | PHARMACOLOGY

381 Uterotonics

Pharmacology of oxytocin, ergometrine, carbetocin and prostaglandins, and PPH management

Oxytocin	Ergometrine	Carboprost	TXA
First line prophylaxis	Avoid in hypertension	Avoid in asthma	1 g IV within 3 h

■ KEY FACTS: Learning objectives

- Describe the pharmacology of uterotonic drugs.
- Describe their use in prevention and treatment of PPH (RCOG GTG 52) and induction/augmentation.
- Describe contraindications and adverse effects.

381.1 Drugs

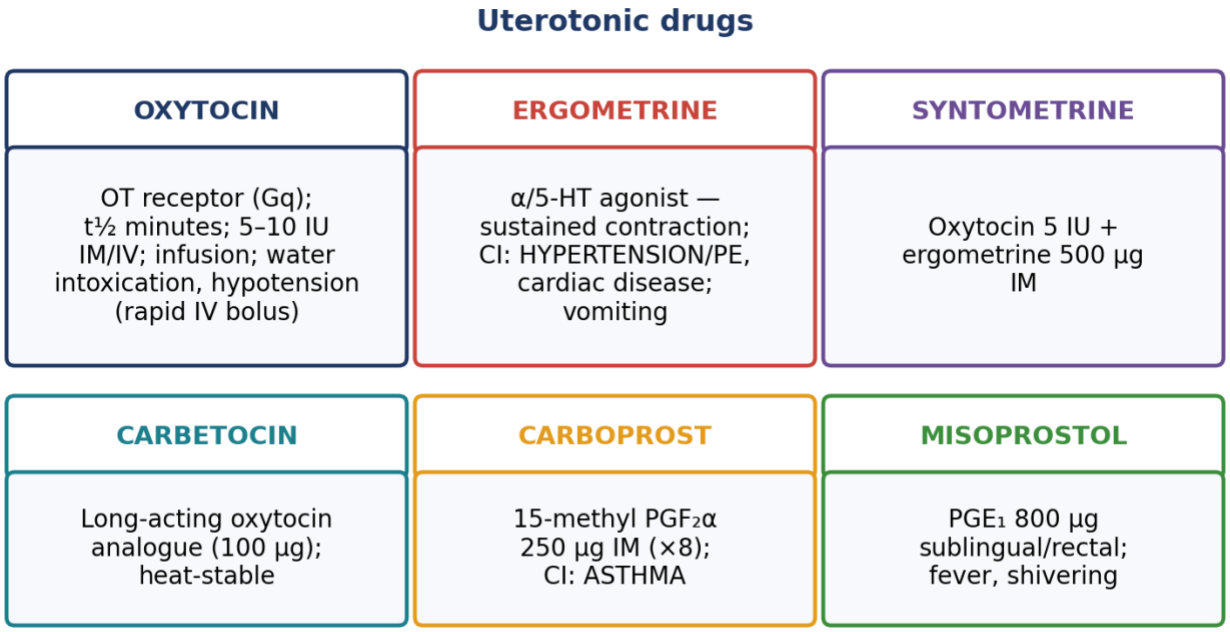


Figure 381.1 — Uterotonic drugs

Drug	Mechanism / adverse effects
Oxytocin	• OT receptor (Gq → IP_3, Ca^{2+}) • Short t½ (≈ 3–5 min) • Rapid IV bolus → hypotension, tachycardia (give slowly) • Prolonged infusion → **water intoxication/hyponatraemia** (ADH-like), receptor desensitisation
Ergometrine	• α-adrenergic, dopaminergic, 5-HT effects → tonic contraction • **Hypertension**, vomiting, coronary spasm — contraindicated in pre-eclampsia, cardiac disease, Raynaud's • Interaction with HIV protease inhibitors

Drug	Mechanism / adverse effects
Carbetocin	• Long-acting oxytocin analogue (single 100 µg dose) • Recommended for prophylaxis at CS in some guidance
Carboprost	$PGF_2\alpha$ analogue — bronchospasm (contraindicated in asthma), diarrhoea, fever, hypertension
Misoprostol	• PGE_1 — fever/shivering, diarrhoea • Cheap, heat-stable (low-resource settings)
Tranexamic acid	Antifibrinolytic — reduces death from bleeding when given within 3 h (WOMAN trial)

381.2 PPH management

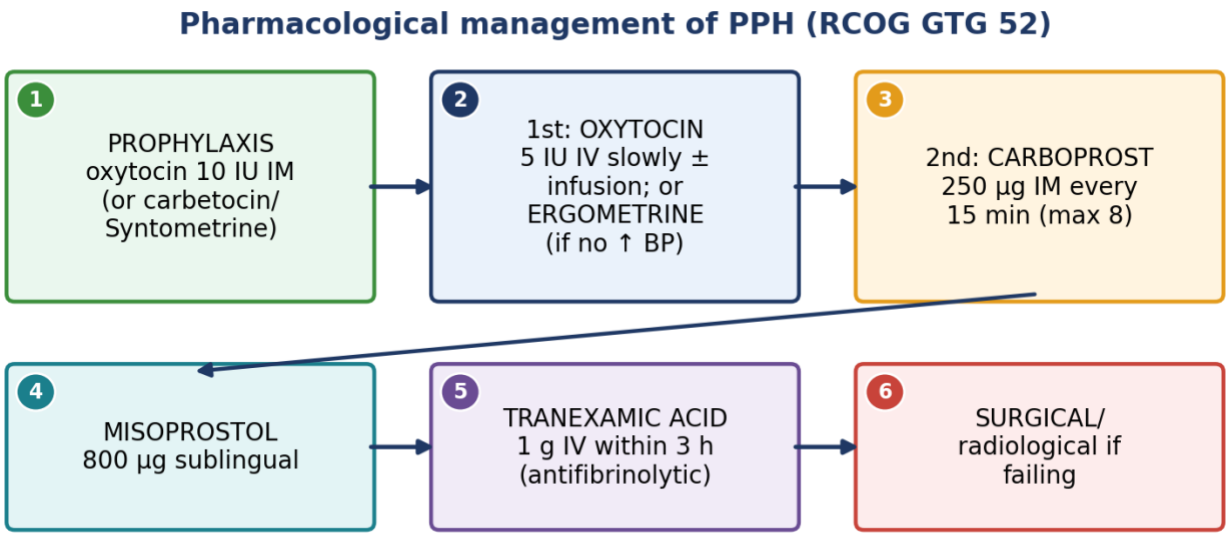


Figure 381.2 — Pharmacological management of PPH

- Uterotonics are given alongside **uterine massage, bimanual compression, bladder emptying, IV access, bloods and fluid/blood resuscitation** (call for help — major haemorrhage protocol).
- Oxytocin is also used for **induction/augmentation** of labour (high/low-dose regimens; stop if hyperstimulation or fetal compromise).

381.3 Must-know summary

■ EXAM TIP

- Oxytocin first line (prophylaxis 10 IU IM); slow IV bolus; water intoxication with long infusions.
- Ergometrine: avoid in hypertension/PE; carboprost: avoid in asthma.
- Misoprostol 800 µg; tranexamic acid 1 g IV within 3 h.
- Uterotonics complement mechanical and resuscitative measures.

■ MNEMONIC / MEMORY AID

'Ergometrine Elevates BP; Carboprost Constricts bronchi'.