

- **MEDICINAL FORMS** There can be variation in the licensing of different medicines containing the same drug.

Solution for injection

- ▶ **Rocuronium bromide (Non-proprietary)**

Rocuronium bromide 10 mg per 1 ml Rocuronium bromide 50mg/5ml solution for injection ampoules | 10 ampoule [PoM] £24.00
 Rocuronium bromide 50mg/5ml solution for injection vials | 10 vial [PoM] £28.00–£36.50 | 10 vial [PoM] £28.00 (Hospital only)
 Rocuronium bromide 100mg/10ml solution for injection vials | 10 vial [PoM] £57.00–£73.00 | 10 vial [PoM] £57.00 (Hospital only)

- ▶ **Esmeron (Merck Sharp & Dohme Ltd)**

Rocuronium bromide 10 mg per 1 ml Esmeron 50mg/5ml solution for injection vials | 10 vial [PoM] £28.92 (Hospital only)

1.2 Neuromuscular blockade reversal

Neuromuscular blockade reversal

Neuromuscular blockade reversal

Anticholinesterases

Anticholinesterases reverse the effects of the non-depolarising (competitive) neuromuscular blocking drugs such as pancuronium bromide but they prolong the action of the depolarising neuromuscular blocking drug suxamethonium chloride.

Neostigmine is used specifically for reversal of non-depolarising (competitive) blockade. It acts within one minute of intravenous injection and its effects last for 20 to 30 minutes; a second dose may then be necessary. Glycopyrronium bromide p. 838 or alternatively atropine sulfate, given before or with neostigmine, prevent bradycardia, excessive salivation, and other muscarinic effects of neostigmine.

Other drugs for reversal of neuromuscular blockade

Sugammadex below is a modified gamma cyclodextrin that can be used in children for the routine reversal of neuromuscular blockade induced by rocuronium bromide.

ANTICHOLINESTERASES

Neostigmine with glycopyrronium bromide

The properties listed below are those particular to the combination only. For the properties of the components please consider, neostigmine p. 672, glycopyrronium bromide p. 838.

- **INDICATIONS AND DOSE**

Reversal of non-depolarising neuromuscular blockade

- ▶ BY INTRAVENOUS INJECTION

- ▶ Child: 0.02 mL/kg, repeated if necessary, alternatively dilute to 1 in 10 solution and give 0.2 mL/kg; maximum 2 mL per course

- **INTERACTIONS** → Appendix 1: glycopyrronium · neostigmine

- **DIRECTIONS FOR ADMINISTRATION** For *intravenous injection*, may be diluted with Sodium Chloride 0.9%, give over 10–30 seconds

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- ▶ **Neostigmine with glycopyrronium bromide (Non-proprietary)**

Glycopyrronium bromide 500 microgram per 1 ml, Neostigmine metilsulfate 2.5 mg per 1 ml Neostigmine 2.5mg/1ml / Glycopyrronium bromide 500micrograms/1ml solution for injection ampoules | 10 ampoule [PoM] £11.50

ANTIDOTES AND CHELATORS

Sugammadex

- **INDICATIONS AND DOSE**

Routine reversal of neuromuscular blockade induced by rocuronium

- ▶ BY INTRAVENOUS INJECTION

- ▶ Child 2-17 years: 2 mg/kg (consult product literature)

IMPORTANT SAFETY INFORMATION

Should only be administered by, or under the direct supervision of, personnel experienced in its use.

- **CAUTIONS** Cardiovascular disease (recovery may be delayed) · pre-existing coagulation disorders · recurrence of neuromuscular blockade— monitor respiratory function until fully recovered · use of anticoagulants (unrelated to surgery) · wait 24 hours before re-administering rocuronium

- **INTERACTIONS** → Appendix 1: sugammadex

- **SIDE-EFFECTS**

- ▶ **Common or very common** Abdominal pain · arrhythmias · cough · dizziness · headache · nausea · procedural complications · skin reactions · taste altered · vomiting
- ▶ **Uncommon** Hypersensitivity
- ▶ **Frequency not known** Bronchospasm

- **PREGNANCY** Use with caution—no information available.

- **RENAL IMPAIRMENT** Avoid if estimated glomerular filtration rate less than 30 mL/minute/1.73 m².

- **DIRECTIONS FOR ADMINISTRATION** For *intravenous injection* dose may be diluted to a concentration of 10 mg/mL with Sodium Chloride 0.9%.

- **NATIONAL FUNDING/ACCESS DECISIONS**

Scottish Medicines Consortium (SMC) decisions

The *Scottish Medicines Consortium*, has advised (February 2013) that sugammadex (*Bridion*[®]) is accepted for restricted use within NHS Scotland for the routine reversal of neuromuscular blockade in high-risk patients only, or where prompt reversal of neuromuscular block is required.

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ELECTROLYTES: May contain Sodium

- ▶ **Bridion (Merck Sharp & Dohme Ltd)**

Sugammadex (as Sugammadex sodium) 100 mg per 1 ml Bridion 500mg/5ml solution for injection vials | 10 vial [PoM] £1,491.00 (Hospital only)
 Bridion 200mg/2ml solution for injection vials | 10 vial [PoM] £596.40 (Hospital only)

1.3 Peri-operative analgesia

Peri-operative analgesia

Non-opioid analgesics

Since non-steroidal anti-inflammatory drugs (NSAIDs) do not depress respiration, do not impair gastro-intestinal motility, and do not cause dependence, they may be useful alternatives or adjuncts to opioids for the relief of postoperative pain. NSAIDs may be inadequate for the relief of severe pain.

Diclofenac sodium p. 676, diclofenac potassium p. 675, ibuprofen p. 679, paracetamol p. 278, and ketorolac trometamol p. 844 are used to relieve postoperative pain in children; diclofenac sodium and paracetamol can be given parenterally and rectally as well as by mouth. Ketorolac trometamol is given by intravenous injection.