MONOGRAPH

Vecuronium

Scope (Staff):	Medical, Pharmacy, Nursing, Anaesthetic Technicians
Scope (Area):	Restricted for use in Theatre or Critical Care Areas only

Child Safe Organisation Statement of Commitment

CAHS commits to being a child safe organisation by applying the National Principles for Child Safe Organisations. This is a commitment to a strong culture supported by robust policies and procedures to reduce the likelihood of harm to children and young people.

This document should be read in conjunction with this DISCLAIMER

⚠ HIGH RISK MEDICINE ⚠

QUICKLINKS

Dosage/Dosage Adjustments	Administration	Compatibility	Monitoring

DRUG CLASS

Vecuronium is a non-depolarising neuromuscular blocking agent.[1]

Vecuronium is a High Risk Medicine.

INDICATIONS AND RESTRICTIONS

- Produces skeletal muscle relaxation during surgery after induction of general anaesthesia
- Facilitates endotracheal intubation
- Facilitates mechanical ventilation

CONTRAINDICATIONS

- Hypersensitivity to vecuronium or any component of the formulation[3]

PRECAUTIONS

Vecuronium should only be given under supervision of an anaesthetist/doctor skilled in advanced airway management and only when a reversal agent and facilities are instantly available for endotracheal intubation.[1-3]

- **Myasthenia gravis, myasthenia syndrome and other neuromuscular diseases (including history of polio) -** vecuronium effect may be potentiated. Extreme caution should be exercised and very small doses may be required.[2]
- **Burns -** resistance to non-depolarising neuromuscular blockers may develop. Monitor response and titrate the dose accordingly.[2]
- **Acidosis, dehydration, electrolyte imbalance -** may enhance effects of neuromuscular blocking agents.[1]
- **Hypothermia -** increases the effect /duration of neuromuscular blockade. Reduce dose and monitor neuromuscular blockade.[1,2]
- **Previous anaphylactic reactions to neuromuscular blockers** – cross sensitivity with other neuromuscular blockers may occur.[1,2]

FORMULATIONS

Listed below are products available at PCH, other formulations may be available, check with pharmacy if required:

- IV vial with 10 mg of vecuronium powder for reconstitution

Imprest location: Formulary One

DOSAGE & DOSAGE ADJUSTMENTS

Neonates: Refer to Neonatal Medication Protocols

Dosing in Overweight and Obese Children: Dose based on ideal body weight, titrate to effect[4]

Child > 4 weeks of age (term):

Intermittent dosing, IV: 0.05 - 0.1 mg/kg, repeat every 1 – 2 hours as required[1, 2,4,5]

Continuous IV infusion: 0.8 – 2.5 **microg**/kg/**min**[4,5]

Renal or hepatic impairment:

prolonged neuromuscular blockade may occur; reduction in dose may be necessary[2]

RECONSTITUTION & ADMINISTRATION

- Reconstitute each vial containing 10 mg of vecuronium with 5 mL of water for injections to make a concentration of 2 mg/mL[3, 6]

Only to be administered in critical care areas under the direct supervision of medical staff.

IV injection:

- Dilute 10 mg (5 mL) of vecuronium with a compatible fluid to a final volume of 10 mL, this results in a **1 mg/mL** dilution[5,6]
- Inject the diluted solution over 5 to 10 seconds[5,6]
- Flush IV cannula with sodium chloride 0.9% after each dose to avoid re-paralysis during recovery[6]

Continuous IV infusion:

- Dilute 50 mg (five vials) with a compatible fluid to a final volume of 50 mL, this results in a **1 mg/mL** dilution[5,6]
- Administer via an infusion pump[6]

COMPATIBILITY *(LIST IS NOT EXHAUSTIVE)*

Compatible fluids: Glucose 5%, sodium chloride 0.9%, Ringer's, Ringer's and glucose 2.5%[6]

Compatible at Y-site: Glucose 5% in sodium chloride 0.9%, Hartmann's[6]

Only commonly used drugs are listed below. This is not a complete list of incompatible drugs. Compatibilities of IV drugs must be checked when two or more drugs are given concurrently.

INCOMPATIBLE drugs: Aciclovir, amphotericin B liposomal (Ambisome®), cefepime, cefotaxime, dantrolene, diazepam, furosemide, ganciclovir, methylprednisolone sodium succinate, pantoprazole, phenytoin, piperacillin/tazobactam, thiopental sodium[2, 6]

MONITORING

Continuous monitoring of heart rate, blood pressure, assisted ventilation status and neuromuscular function[4]

ADVERSE EFFECTS

Common: Changes in vital signs, prolonged neuromuscular blockade. Myopathy (after long term administration in combination with corticosteroids)[3]

Rare: Anaphylactic reactions, bronchospasm, hypotension, tachycardia, angioedema, urticaria[1,3]

STORAGE

Vial: store below 25°C. Protect from light[6]

Reconstituted solution: stable for 24 hours at 2 to 8° C. Protect from light[6]

INTERACTIONS

This medication may interact with other medications; consult PCH approved references (e.g. Clinical Pharmacology), a clinical pharmacist or PCH Medicines Information Service on extension 63546 for more information.

Treatment of Toxicity[1,3]

- Ventilatory support and sedation
- Reversal of neuromuscular blockade:
    - **Neostigmine** (an acetylcholinesterase inhibitor), with **atropine** (an anticholinergic) to prevent bradycardia
    - **Sugammadex**

Please note: The information contained in this guideline is to assist with the preparation and administration of **vecuronium**. Any variations to the doses recommended should be clarified with the prescriber prior to administration

Related CAHS internal policies, procedures and guidelines

Guidelines for Drug Dosing in Overweight and Obese Children 2 to 18 Years of Age

High Risk Medicines (policy)

References

1. Australasian Society of Clinical and Experimental Pharmacologists and Toxicologists. Pharmaceutical Society of Australia. The Royal Australian College of General Practitioners. Adelaide SA: Australian Medicines Handbook 2023.
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6. Wong E, Symons K, Society of Hospital Pharmacists of Australia. Australian injectable drugs handbook. Nineth edition. Abbotsford, Vic.: The Society of Hospital Pharmacists of Australia; 2023 [cited Sep 2023]. Available from: https://aidh-hcn-com-au.pklibresources.health.wa.gov.au/browse/v/vecuronium

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File Path:	W:\Safety & Quality\CAHS\CLOVERS MEDICAL Pharmacy\Procedures Protocols and Guidelines\Medication Monographs_Word\PCH.MED.Vecuronium.docx		
Document Owner:	Chief Pharmacist		
Reviewer / Team:	Pharmacist, Paediatric Critical Care Consultant, Paediatric Critical Care Clinical Nurse Manager, Anaesthetic consultant		
Date First Issued:	Apr 2017	**Last Reviewed:**	Jan 2024
Amendment Dates:		**Next Review Date:**	Jan 2027
Approved by:	Medication Safety Committee	**Date:**	Jan 2024
Endorsed by:	Drugs and Therapeutics Committee	**Date:**	Feb 2024
Standards Applicable:	NSQHS Standards: NSMHS: N/A Child Safe Standards: N/A		

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