MONOGRAPH

Atracurium

Scope (Staff):	Medical, Pharmacy, Nursing, Anaesthetic Technicians
Scope (Area):	Restricted for use in Theatre and 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

Non-depolarising neuromuscular blocker.[1]

Atracurium is a High Risk Medicine.

INDICATIONS AND RESTRICTIONS

Adjunct to general anaesthesia to facilitate endotracheal intubation and to provide skeletal muscle relaxation during surgery or mechanical ventilation.[2]

CONTRAINDICATIONS

Hypersensitivity to atracurium or any component of the formulation.[2]

PRECAUTIONS

Atracurium should only be given under strict supervision of anaesthetist/doctor skilled in advanced airway management and only when facilities are instantly available for endotracheal intubation and providing adequate ventilation of the patient.[2]

- Paralysing agent – causes respiratory arrest. Do not use without adequate sedation. Reversal agent must be readily available.[2]
- Myasthenia gravis and neuromuscular diseases (e.g. dystrophia myotonica, history of polio) – atracurium effect may be potentiated. Dose reduction should be considered.[1, 2]

- Obesity – unpredictable effect, calculate dose using ideal body weight.[1, 3, 4]
- Burns – resistance to non-depolarising neuromuscular blockers may develop, monitor response.[1]
- Cardiovascular disease or sensitivity to hypotension (e.g. patients with hypovolaemia) – increased risk of hypotensive episodes with atracurium. Initial dose should be reduced and administered slowly.[2, 3]
- Acidosis, dehydration, electrolyte imbalance – may enhance effects of atracurium. Where possible, correct before administration and reduce dose.[1]
- Hypothermia – increases intensity/duration of neuromuscular blockade, lower doses required.[1]
- Hypersensitivity to other neuromuscular blocking agents — allergic cross-reactivity has been reported, use extreme caution in these patients.[1, 2]
- History of anaphylaxis or asthma – increased risk of histamine release. Initial dose should be reduced and administered slowly.[2, 3]

FORMULATIONS

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

- Atracurium besilate 25 mg/2.5 mL ampoule.[2]

Imprest location: Formulary One

DOSAGE & DOSAGE ADJUSTMENTS

Dose to be calculated based on ideal body weight.[3, 4]

Refer to **Dosing in Overweight and Obese Children**.

Child < 2 years (including neonates) [3, 4]

IV injection:

- *Intubation*: 0.3–0.5 mg/kg/dose
- *Maintenance*: 0.1–0.2 mg/kg/dose, adjusted according to response.

Child ≥ 2 years[2, 3]

IV injection:

- *Intubation:* 0.3–0.6 mg/kg/dose
- *Maintenance:* 0.08–0.1 mg/kg/dose, adjusted according to response.

Note: Initial dose should be reduced to 0.3 to 0.4 mg/kg in patients with significant cardiovascular disease or with history of increased risk of histamine release (e.g. asthma, anaphylaxis).[2, 3]

Renal or hepatic impairment: Dosage adjustment is not necessary.[2, 3]

ADMINISTRATION

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

Atracurium does not alter consciousness. Only to be given once unconsciousness has been induced by an anaesthetic agent.[2]

IV injection:

- Inject undiluted rapidly over a few seconds.
- For patients with significant cardiovascular disease or with history of increased risk of histamine release (e.g. asthma, severe anaphylactoid reaction), dose should be administered slowly or in divided doses over one minute.
- Flush line with sodium chloride 0.9% to avoid re-paralysis during recovery.[2, 5]

Anticholinesterase agent (e.g. neostigmine) **must be readily available** for reversal of neuromuscular blockade.[2, 5] To be given in conjunction with an anticholinergic (such as atropine) to prevent muscarinic effects (especially bradycardia).[1, 2]

- Refer to Neostigmine Monograph for further information.

COMPATIBILITY *(LIST IS NOT EXHAUSTIVE)*

Compatible fluids:

Sodium chloride 0.9%, glucose 5%, glucose 4% and sodium chloride 0.18%, Hartmann's and Ringer's.[5]

For stability data of individual brands, refer to **ATRACURIUM (Australian Injectable Drugs Handbook)**.[5]

Compatible and INCOMPATIBLE drugs:

Giving other drugs via Y-site with neuromuscular blockers is not recommended.[5]

Consult two or more drug references (e.g. Compatibilities of IV drugs) or pharmacy when there is a requirement for medications to be given concurrently.

Atracurium has an acidic pH and should not be mixed with alkaline solutions.[2]

MONITORING

Continuous monitoring of vital signs (heart rate, blood pressure, respiratory rate), assisted ventilation status and neuromuscular function.[3]

ADVERSE EFFECTS

Many of the following adverse effects are suggestive of histamine release.[1, 2]

In patients susceptible to histamine release (e.g. significant cardiovascular disease, asthma, severe anaphylactoid reaction), this may be minimised by administering dose slowly or in divided doses over one minute.[2, 5]

Common: hypotension, skin flushing, tachycardia.[1]

Infrequent: bronchospasm, bradycardia.[1]

Rare: anaphylactic reactions.[1]

STORAGE

Store at 2 to 8°C. Protect from light.

Tracrium® ampoules are stable for 1 week below 25°C protected from light.[2, 5]

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.

***Please note: The information contained in this guideline is to assist with the preparation and administration of **atracurium**. 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

References

1. Australian Medicines Handbook. Adelaide (SA): Australian Medicines Handbook Pty Ltd; 2023 [cited. Available
2. MIMS Online. Sydney (NSW): MIMS Australia Pty Ltd;
3. Atracurium: Drug information UpToDate; October 2023.
4. British National Formulary for Children, 2023. London (United Kingdom): BMJ and Pharmaceutical Press;
5. Australian Injectable Drugs Handbook Ninth Edition. Abbotsford (VIC): The Society of Hospital Pharmacists of Australia; 2023 [cited. Available

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