Cisatracurium Intravenous Infusion for Adults

Who can administer

Administration RESTRICTED - seeÂ Appendix 1

Important information

- Critical care administration ONLY.Â
- Deep sedation (RAAS < -3) is mandatory and should be assessed prior to commencing an neuromuscular blockade (NMBA)Â [ref 1]
- All patients on NMBAÂ infusions should be administered regular lubricating eye care and eyelids should remain closed to protect against corneal injuryÂ [ref 2]
- For Y-site compatibilityÂ see below
- Where cisatracurium is used in conjunction with **isoflurane or enflurane a REDUCTION** in infusion rate of 40% may be required

Available preparations

Cisatracurium JUNO 2mg/ml solution for injection/infusion [unlicensed]Â **(5mg/ml ampoules also exist, check carefully)**

Nimbex 2mg/ml solution for injection/infusion

Reconstitution

Already in solutionÂ

Infusion fluids

Sodium chloride 0.9% **(preferred)** or Glucose 5% (less stable, avoid)

Methods of intravenous administration

Bolus intravenous injectionÂ

- Loading dose onlyÂ

Continuous intravenous infusion (using an electronically controlled infusion device)

- Use undiluted

Dose in adults

Intensive Care Unit Paralysis [ref 1]**Â**

- To facilitate mechanical ventilation
- For shivering from therapeutic hypothermia (unlicensed) [ref 2]
- Use for up to 48hours in patients with early Acute Respiratory Distress Syndrome (ARDS) Â with PaO2/FiO2 <150 (unlicensed) [ref 2]Â Â

Dose

- Initial bolus dose of 0.15mg/kg, followed immediately by an **initial continuous infusion of 3 mcg/kg/minute**
- Adjust rate thereafter accordingly.Â
- The infusion rate may range from 0.5 to 10mcg/kg/minute (large variation amongst individuals)
- See table 1 below

Table 1: Cisatracurium Â loading and maintenance rates using 2mg/ml solution

Weight (kg)Â	Loading Dose (0.15mg/kg)Â Â	Maintenance infusion 1mcg/kg/minuteÂ	Maintenance infusion 3mcg/kg/minute
40kg	6mg (3ml)Â	2.4mg/hr (1.2ml/hr)	Â 7.2mg/hr (3.6ml/hr)
45kg	6.8mg (3.4mL)	2.8mg/hr (1.4ml/hr)Â Â	Â 8.2mg/hr (4.1ml/hr)
50kg	7.6mg (3.8ml)	3mg/hr (1.5ml/hr)	Â 9mg/hr (4.5ml/hr)
55kg	8.2mg (4.1ml)	3.4mg/hr (1.7ml/hr)	Â 10mg/hr (5ml ml/hr)
60kgÂ	9mg (4.5ml)Â Â	3.6mg/hr (1.8ml/hr)	Â 10.8mg/hr (5.4ml/hr)
65kg	9.8mg (4.9ml)Â	4mg/hr (2 ml/hr)	Â 11.8mg/hr (5.9ml/hr)
70kg	10.6mg (5.3ml)Â	4.2mg/hr (2.1ml/hr)	Â 12.6mg/hr (6.3ml/hr)
75kgÂ Â	11.2mg (5.6ml)	4.6mg/hr (2.3ml/hr)	Â 13.6mg/hr (6.8ml/hr)Â
80kg	12mg (6ml)	4.8mg/hr (2.4ml/hr)Â Â Â	Â 14.4mg/hr (7.2ml/hr)

To avoid excessive dosage in obese patients, consider dose calculation using ideal body-weight [ref 3]
Ideal Body WeightÂ - MDCalc

Monitoring

- Monitor neuromuscular function during usage to individualise dosage requirements
- Neuromuscular blockade should be reviewed with a view to stop after 48hours if PF ratio >150, regardless of mean airway pressureÂ [ref 5]Â
- Monitor for acid-base and/or serum electrolyte abnormalities that may increase/decrease the sensitivity of a patient to neuromuscular blockade agents

Further information

- Patients with myasthenia gravis and other forms of neuromuscular disease have shown greatly increased sensitivity to non-depolarising blocking agents. A loading dose of not more than 0.02mg/kg is recommended in these patients.Â
- Degradation of cisatracurium has been demonstrated to occur more rapidly in glucose 5% than in sodium chloride 0.9% and it is recommended that glucose 5% is not used as the diluent in preparing cisatracurium for infusion [ref 4]

- NMBAs are hydrophilic compounds with small Vd, suggesting that their distribution into adipose tissue is limited [ref 1]
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Storage

- Store in a refrigerator (2-8^{0}C)
- **SAFETY:Â** Must be segregated from other drugs in fridge to avoid inadvertent drug selection errors [ref 6]
    - Section in fridge must have adequate warning labels

References

SPC Nimbex. Aug 2021,Â
SPC Cisatracurium JUNO. 31 March 2023
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2. Cisatracurium: Drug Information. Uptodate. Accessed Jan 13th 2022
3. BNF - medicinescomplete.com. Accessed Jan 11th 2022.
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5. VerbalÂ communication with Prof.Â Patrick Neligan 23rd Feb 2022
6: ISMP Targeted Medication Safety Best Practices for Hospitals 2020-2021. Accessed Jan 26th 2022

Therapeutic classification

Neuromuscular blocker