ROCURONIUM

DESCRIPTION
A non-depolarizing neuromuscular blocking agent that produces skeletal muscle paralysis mainly by competitively attaching itself to the cholinergic receptors on the 'end-plates' responsible for transmitting signals to the body's voluntary muscles.

USE
Skeletal muscle paralysis in infants requiring mechanical ventilation
PARALYSED INFANTS SHOULD ALWAYS BE SEDATED!

PRESENTATION
50mg/5ml ampoule

PHARMACOKINETICS
Onset of action is 1-10 min and recovery may take up to an hour. The mean half life is 1.3 hours in infancy and is not greatly affected by renal dysfunction. Mostly eliminated by the liver and biliary system, but up to a quarter is eliminated unchanged in the urine.

DOSE
- **IV BOLUS**
  - Initial: 600mcg/kg/dose
  - Maintenance: 300mcg/kg/dose 2-4 hourly as needed.
- **IV INFUSION**
  - 4-8mcg/kg/minute

<table>
<thead>
<tr>
<th>Infusion strength</th>
<th>Prescribed amount</th>
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<tr>
<td>1ml/hr=10mcg/kg/min</td>
<td>30mg/kg Rocuronium to make a 50ml solution</td>
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ROUTE
IV infusion, IV injection, IM injection

RECONSTITUTION
Add 1ml of Rocuronium (10mg) to 4ml of 0.9%sodium chloride or 5% dextrose to make 2mg/ml solution.

STORAGE
REFRIGERATE vial! Discard unused portion.

ADMINISTRATION
- **IV BOLUS**
  - Slow IV bolus injection using the proximal IV bung.

  **KEEP MADE UP SOLUTION MARKED WITH ADDITIVE LABEL AT THE BEDSIDE. DISCARD UNUSED PORTION AT THE END OF EACH NURSING SHIFT.**

- **IV INFUSION**
  - Add prescribed amount of Rocuronium to 0.9%sodium chloride or 5%dextrose to make a total of 50ml solution when 1ml/hr=10mcg/kg/min.

MONITORING
Continuous cardio-respiratory and arterial blood pressure monitoring. *Infant must be on mechanical ventilation!*

ADVERSE EFFECTS
1. Hypoxemia from inadequate mechanical ventilation and altered pulmonary mechanics.
2. Tachycardia and blood pressure changes both hypotension and hypertension.
3. Increased salivation and nausea.
4. Arrhythmias.
ROCURONIUM cont

PRECAUTIONS  There is very limited data on the use of Rocuronium in the newborn. Neuromuscular blockade may be enhanced by acidosis, hypothermia, neuromuscular disease, hepatic disease and renal failure. Neuromuscular blockade may be minimized by alkalosis, adrenaline, and hyperkalemia. In patients with myasthenia gravis or myasthenic (Eaton-Lambert) syndrome, small doses of nondepolarizing neuromuscular blocking agents may have profound effects.

CONTRAINDICATIONS  Hypersensitivity to rocuronium bromide.

DRUG INTERACTIONS  1. Isoflurane and enflurane may prolong the duration of action of initial and maintenance doses of rocuronium and decrease the average infusion requirement of rocuronium by 40%.
2. Gentamicin and vancomycin may enhance the neuromuscular blocking action of Rocuronium.
3. Chronic administration of phenytoin may shorten durations of neuromuscular block

ANTIDOTE  Neostigmine 50 mcg/kg/dose and Atropine 20 mcg/kg/dose

SOLUTION COMPATIBILITY  5%dextrose, 0.9%sodium chloride

TERMINAL INJECTION SITE COMPATIBILITY  midazolam

TERMINAL INJECTION SITE INCOMPATIBILITY  Lipid, amoxycillin, amphotericin, cephalozin, dexamethasone, diazepam, erythromycin, frusemide, hydrocortisone, insulin, phenobarbitone, prednisolone, propofol, vancomycin.

REFERENCES  