**rocuronium** (roe-kyoor-own-er-um)

**Indications**

**Action**
Prevents neuromuscular transmission by blocking the effect of acetylcholine at the myoneural junction. Has no analgesic or anxiolytic properties.

**Therapeutic Effects:**
Skeletal muscle paralysis.

**Pharmacokinetics**
Absorption: Following IV administration, absorption is essentially complete.

Distribution: Rapidly distributes into extracellular space.

Metabolism and Excretion: Mostly metabolized and eliminated by the liver.

Half-life:
- Infants 3–12 mo: 0.8–1.8 hr
- Children 1–3 yr: 0.4–1.8 hr
- Children 3–8 yr: 0.5–1.1 hr
- Adults: 1.4–2.4 hr

**TIME/ACTION PROFILE**
- **ROUTE**
  - **ONSET**
    - **PEAK**
    - **DURATION
  - **IV (Adults):**
    - Rapid sequence tracheal intubation—0.6–1.2 mg/kg;
    - Maintenance dosing—0.1–0.2 mg/kg, repeat doses as needed;
    - Continuous infusion—10–12 mcg/kg/min (range 4–16 mcg/kg/min).

**Contraindications/Precautions**
Contraindicated in: Hypersensitivity. Use Cautiously in: Dehydration or electrolyte abnormalities (should be corrected); Fractures or muscle spasm; Hyperthermia; Significant hepatic impairment; Shock; Extensive burns (may be more resistant to effects); Low plasma pseudocholinesterase levels (may be seen in association with anemia, hepatic failure, cholinesterase inhibitors/mercurials, severe liver disease, pregnancy, or hereditary predisposition); (These patients: Off; continuation of therapy may increase the potential risk to fetus). **Pediatrics:** Children <3 mo (safety and effectiveness not established).

**Adverse Reactions/Side Effects**

**Interactions**
Drug-Drug: Intensity and duration of paralysis may be prolonged by pretreatment with succinylcholine, general anesthesia, aminoxyglocol, vancomycin, tetracyclines, polymyxin B, colistin, clindamycin, lidocaine, and other local anesthetics, lithium, quinidine, procainamide, beta-adrenergic blocking agents, potassium-losing diuretics, or magnesium. Higher infusion rates may be required and duration of action may be shortened in patients receiving long-term carbamazepine or phenytoin. May be associated with QTc interval prolongation when administered with general anesthesia.

**Route/Dosage**
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**NURSING IMPLICATIONS**
**Assessment**
- Assess respiratory status continuously throughout therapy with neuromuscular blocking agents. These medications should be used only to facilitate intubation or in patients already intubated.
- Neuromuscular response should be monitored with a peripheral nerve stimulator intraoperatively. Paralysis is initially selective and usually occurs sequentially in the following muscles: Lesser muscles of eyelids, muscles of mastication, limb
Neuromuscular blocking agents have
- Dose is titrated to patient response.
- High Alert: Implementation
- Fear (Side Effects)
- Impaired verbal communication (Side Effects)
- Ineffective breathing pattern (Indications)
- Potential Nursing Diagnoses
- Administration of fluids and vasopressors may be necessary to treat severe hypo-
- Administration of anticholinesterase agents (neostigmine, pyridostigmine) may
- Toxicity and Overdose:
- Monitor infusion site frequently. If signs of tissue irritation or extravasation occur,
- ECG, heart rate, and BP throughout administration.
- If overdose occurs, use peripheral nerve stimulator to
treat severe hypotension or shock.

IV Administration
- Direct IV: Administration modified. Rate: Titrate according to patient response.
- Concentration: Diluent: 0.9% NaCl, sterile water for injection, DW, LR injection, and 0.9% NaCl for injection. Solution is suitable for 24 hr at room tempera-
- Concentration: 0.5–1 mg/mL. Rate: Infusion rates of 0.004–0.016
- nefibrate, nizatidine, nicardipine, nifedipine, nitroglycerin, nitroprusside, octreotide, ondas-
- nicardipine, nitroglycerin, nitroprusside, octreotide, ondansetron, oxaliplatin, palonosetron, pamidronate, pemetrexed, pentamidine, pen-
- nicillin, amikacin, aminocaproic acid, amphotericin B colloidal, amphotericin B lipid com-
- epiprodine, esmolol, etoposide, etoposide phosphate, fenoldopam, fenoximidine, fentanyl,
- tizolactam, tobramycin, vasopressin, verapamil, vincristine, vinorelbine, voriconazole, zidovudine, zolendronic acid.

Y-Site Compatibility:
- amphotericin B, amphotericin B colloidal, amphotericin B lipid complex, eptifibatide, ertapenem, esmolol, etoposide, etoposide phosphate, fenoldopam, fenoximidine, fentanyl,
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rocuronium

- succinate, midazolam, lorazepam, methohexitol, metoprolol tartrate, magnesium, pancreate, phenytoin, piperacillin/tazobactam, potassium phosphates, diazepam.

**Patient/Family Teaching**
- Explain all procedures to patient receiving neuromuscular blocker therapy without general anesthesia, because consciousness is not affected by neuromuscular blocking agents alone.
- Reassure patient that communication abilities will return as the medication wears off.

**Evaluation/Desired Outcomes**
- Adequate suppression of the twitch response when tested with peripheral nerve stimulation and subsequent muscle paralysis.
- Improved compliance during mechanical ventilation.
- Diagnosis of myasthenia gravis.

*Why was this drug prescribed for your patient?*