Zemuron (rocuronium bromide) - Drug Summary

Organon Pharmaceuticals USA

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Zemuron
(rocuronium bromide)

THERAPEUTIC CLASS

Skeletal muscle relaxant (nondepolarizing)

DEA CLASS

RX

ADULT DOSAGE & INDICATIONS

Skeletal Muscle Relaxant

Adjunct to general anesthesia to facilitate rapid sequence and routine tracheal intubation, and to provide skeletal muscle relaxation during surgery/mechanical ventilation

Tracheal Intubation:
Initial: 0.6mg/kg; a lower dose of 0.45mg/kg may be used
May administer a large bolus dose of 0.9mg/kg or 1.2mg/kg under opioid/nitrous oxide/oxygen anesthesia

Rapid Sequence Intubation:
Premedicated and Adequately Anesthetized: 0.6-1.2mg/kg

Maint: 0.1mg/kg, 0.15mg/kg, or 0.2mg/kg, administered at 25% recovery of control T1 (defined as 3 twitches of train-of-four)

Continuous Infusion:
Initial: 10-12mcg/kg/min only after early evidence of spontaneous recovery from an intubating dose; initiation of the infusion after substantial return of neuromuscular function (>10% of control T1) may necessitate additional bolus doses to maintain adequate block for surgery

Inhalation anesthetics may enhance neuromuscular blocking action; in the presence of steady state concentrations of enflurane/isoflurane, may be necessary to reduce rate of infusion by 30-50% at 45-60 min after intubating dose

Refer to PI for recommendations for infusion rates

PEDIATRIC DOSAGE & INDICATIONS

Skeletal Muscle Relaxant

Adjunct to general anesthesia to facilitate tracheal intubation, and to provide skeletal muscle relaxation during surgery/mechanical ventilation

Tracheal Intubation:
Initial: 0.6mg/kg; a lower dose of 0.45mg/kg may be used depending on anesthetic technique and age of patient

Induction:
W/ Sevoflurane: 0.45mg/kg or 0.6mg/kg
W/ Halothane: 0.6mg/kg

Maint:
All Pediatric Age Groups:
0.15mg/kg at reappearance of T3 or
7-10mcg/kg/min upon reappearance of T2 when sevoflurane is used for induction and isoflurane/nitrous oxide for maint of general anesthesia

3 Months of Age-Adolescents:
0.075-0.125mg/kg upon return of T1 to 0.25% or continuous infusion of 12mcg/kg/min upon return of T1 to 10% (1 twitch present in train-of-four), when halothane is used for general anesthesia

ADMINISTRATION

IV route

If administered via the same infusion line that is also used for other drugs, it is important to adequately flush infusion lines between administration of incompatible drugs or drugs for which compatibility has not been established
Do not mix w/ alkaline sol
Infusion sol should be used w/in 24 hrs of mixing; unused portions should be discarded

Compatible Diluents
Compatible at concentrations up to 5mg/mL for 24 hrs at room temperature in plastic bags, glass bottles, and plastic syringe pumps
0.9% NaCl Sol
D5W
D5 in saline
Sterile Water for Inj
Lactated Ringer's

Refer to PI for Drug Admixture Incompatibility

HOW SUPPLIED

Inj: 10mg/mL [5mL]

WARNINGS/PRECAUTIONS

Administer under the supervision of experienced clinicians who are familiar with the drug's actions, and complications of its use. Should be administered where facilities for intubation, mechanical ventilation, oxygen therapy, and an antagonist are immediately available. Employ peripheral nerve stimulator to monitor drug response, need for additional doses, adequacy of spontaneous recovery or antagonism, and to decrease the complications of overdosage if additional doses are administered. Severe anaphylactic reactions reported. Caution in patients with previous anaphylactic reactions to other neuromuscular blocking agents; cross-reactivity reported. Must be accompanied by adequate anesthesia or sedation. Extubate only after sufficient recovery from neuromuscular block in order to prevent residual paralysis complications; geriatric patients may be at increased risk for residual neuromuscular block. Has not been studied for long-term use in intensive care unit (ICU); tolerance and myopathy may occur. Conditions associated with an increased circulatory delayed time (eg, cardiovascular disease or advanced age) may be associated with delayed onset time. Profound effects reported in cachectic or debilitated patients, patients with neuromuscular diseases, and patients with carcinomatosis. Resistance to nondepolarizing agents associated with burns, disuse atrophy, denervation, direct muscle trauma, cerebral palsy patients, and with chronic exposure to therapy. Severe acid-base and/or electrolyte imbalances may potentiate or cause resistance to neuromuscular blockade. Caution with hepatic impairment. May increase pulmonary vascular resistance; caution with pulmonary HTN or valvular heart disease. May have profound effects with myasthenia gravis or myasthenic (Eaton-Lambert) syndrome; may use small test dose to monitor response. If extravasation occurs, d/c inj or infusion immediately and restart in another vein. Not recommended for rapid sequence induction in cesarean section patients and for rapid sequence intubation in pediatric patients.

ADVERSE REACTIONS

Transient hypotension, HTN, tachycardia.

DRUG INTERACTIONS

Inhalation anesthetics (eg, enflurane, isoflurane) may enhance neuromuscular blocking action. Interactions observed when other nondepolarizing muscle relaxants were administered in succession. Resistance observed with chronic anticonvulsant therapy (eg, phenytoin, carbamazepine). Certain antibiotics (eg, aminoglycosides, vancomycin, tetracyclines, bacitracin, polymyxins, colistin, sodium colistimethate) may cause prolongation of neuromuscular block. Possible recurrent paralysis with inj of quinidine during recovery. Magnesium salts administered for the management of toxemia of pregnancy may enhance neuromuscular blockade. Concomitant use with general anesthetics may prolong QTc interval. Increased duration of neuromuscular block and decreased infusion requirements of neuromuscular agents with local anesthetics, procainamide, and lithium. Avoid administration following succinylcholine until recovery from succinylcholine is observed. Myopathy following long-term administration in the ICU may occur with corticosteroids; limit the period of use of rocuronium bromide.

PREGNANCY AND LACTATION

Category C, safety not known in nursing.

MECHANISM OF ACTION

Nondepolarizing neuromuscular blocking agent; acts by competing for cholinergic receptors at the motor end-plate.

PHARMACOKINETICS

Distribution: Plasma protein binding (30%). Refer to PI for variable parameters based on the age of the patient as well as concomitant disease states and therapies. **Metabolism:** Liver; 17-desacetyl-rocuronium (metabolite). **Elimination:** Refer to PI for variable parameters based on the age of the patient as well as concomitant disease states and therapies.

ASSESSMENT

Assess for history of hypersensitivity/anaphylactic reactions to the drug or other neuromuscular blocking agents, malignant hyperthermia (MH)-susceptible patients, conditions associated with an increased circulatory delayed time, acid-base and/or electrolyte abnormalities, pulmonary HTN, valvular heart disease, myasthenia gravis or myasthenic (Eaton-Lambert) syndrome, presence of cachexia or debilitation, neuromuscular diseases, carcinomatosis, burns, disuse atrophy, denervation, direct muscle trauma, cerebral palsy, hepatic impairment, pregnancy/nursing status, and for possible drug interactions.

MONITORING

Monitor for signs/symptoms of anaphylactic reactions, MH, potentiation/resistance to neuromuscular blocking effects, increased pulmonary vascular resistance, residual paralysis, extravasation, tolerance, myopathy, and other adverse reactions. Monitor geriatric patients for an increased risk for residual neuromuscular block.

PATIENT COUNSELING

Instruct to notify physician about previous medical history, current medications and any history of hypersensitivity to the drug or other neuromuscular blocking agents; inform that certain medical conditions and medications might influence how the drug works. Inform that severe anaphylactic reactions to neuromuscular blocking agents have been reported.

STORAGE

2-8°C (36-46°F); do not freeze. Upon removal from refrigeration to room temperature storage conditions (25°C [77°F]), use within 60 days. Use opened vials within 30 days.

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