

Rocuronium

Class: Neuromuscular Blocker Agent, Nondepolarizing

Indications: Facilitate both rapid sequence and routine endotracheal intubation and to relax skeletal muscles during surgery; to facilitate mechanical ventilation in ICU patients

Available dosage form in the hospital: Solution, Intravenous, as bromide: 50 mg; 10 mg/mL.

Dosage: Dose to effect; doses will vary due to interpatient variability. Dosing also dependent on anesthetic technique and age of patient.

-Rapid sequence intubation: I.V.: 0.6-1.2 mg/kg

-Obesity: In adult patients with morbid obesity (BMI >40 kg/m²), the use of 1.2 mg/kg using ideal body weight (IBW) provided a short onset of action and excellent or good intubating conditions at 60 seconds in one study (Gaszynski, 2011).

-Tracheal intubation: I.V.:

-*Initial:* 0.45-0.6 mg/kg; administration of 0.3 mg/kg may also provide optimal conditions for tracheal intubation (Barclay, 1997)

-Obesity: May use ideal body weight (IBW) for morbidly obese (BMI >40 kg/m²) adult patients (Leykin, 2004); onset time may be slightly delayed using IBW. The manufacturer recommends dosing based on actual body weight in all obese patients.

-*Maintenance for continued surgical relaxation:* 0.1-0.2 mg/kg; repeat as needed **or** a continuous infusion of 10-12 **mcg/kg/minute** (0.6-0.72 **mg/kg/hour**) only after recovery of neuromuscular function is evident; infusion rates have ranged from 4-16 **mcg/kg/minute** (0.24-0.96 **mg/kg/hour**)

Note: Inhaled anesthetic agents prolong the duration of action of rocuronium. Use lower end of the dosing range; redosing interval guided by monitoring with a peripheral nerve stimulator.

-Preinduction defasciculating dose: I.V.: 0.03-0.06 mg/kg given 1.5-3 minutes before administration of succinylcholine (Harvey, 1998; Martin, 1998)

-ICU paralysis (eg, facilitate mechanical ventilation) in selected adequately sedated patients (Greenberg, 2013; Murray, 2002; Rudis, 1996; Sparr, 1997; Warr, 2011): Initial bolus dose: 0.6-1 mg/kg, then a continuous I.V. infusion of 8-12 **mcg/kg/minute** (0.48-0.72 **mg/kg/hour**); monitor depth of blockade every 2-3 hours initially until stable dose, then every 8-12 hours; adjust rate of administration by 10% increments according to peripheral nerve stimulation response or desired clinical response

Note: When possible, minimize depth and duration of paralysis. Stopping the infusion for some time until forced to restart based on patient condition is recommended to reduce post-paralytic complications (eg, acute quadriplegic myopathy syndrome [AQMS]) (Murray, 2002).

-Intermittent dosing has also been described with an initial loading dose of 50 mg followed by 25 mg given when peripheral nerve stimulation returns (Sparr, 1997).

Renal Impairment:

No adjustments required; duration of neuromuscular blockade may vary in patients with renal impairment.

Hepatic Impairment:

Reductions may be necessary in patients with liver disease; duration of neuromuscular blockade may be prolonged due to increased volume of distribution. When rapid sequence intubation is required in adult patients with ascites, a dose on the higher end of the dosage range may be necessary to achieve adequate neuromuscular blockade.

Common side effects: >1%: Cardiovascular: Hypertension ($\leq 2\%$), hypotension (transient; $\leq 2\%$)

<1% (Limited to important or life-threatening): Abnormal ECG, anaphylactoid reaction, anaphylaxis, arrhythmia, bronchospasm, injection site edema, hiccups, pruritus, nausea, pulmonary vascular resistance (increased), rash, rhonchi, shock, tachycardia, vomiting, wheezing

Pregnancy Risk Factor: C