Vecuronium

Class: Neuromuscular Blocker Agent, Nondepolarizing

Indications: To facilitate endotracheal intubation and to relax skeletal muscles during surgery; to facilitate mechanical ventilation in ICU patients; does not relieve pain or produce sedation

Available dosage form in the hospital: Solution, Intravenous, as bromide: 4 mg.

Dosage: Dose to effect; doses will vary due to interpatient variability.

-Surgical relaxation: I.V. (do not administer I.M.):

-Tracheal intubation: I.V.: Initial: 0.08-0.1 mg/kg. **Note:** If intubation is performed using succinylcholine (not preferred agent in pediatric patients), the initial dose of vecuronium may be reduced to 0.04-0.06 mg/kg with inhalation anesthesia and 0.05-0.06 mg/kg with balanced anesthesia.

-*Obesity:* For obese (≥130% of IBW) adult patients, may use ideal body weight (IBW) (Erstad, 2004; Schwartz, 1992; Weinstein, 1988); onset time may be slightly delayed using IBW.

-*Pretreatment/priming:* Adults: 10% of intubating dose given 3-5 minutes before intubating dose

-Maintenance for continued surgical relaxation (only after return of neuromuscular function): Intermittent dosing: 0.01-0.015 mg/kg **or** continuous infusion of 0.8-1.2 **mcg**/kg/**minute** (0.048-0.072 **mg**/kg/**hour**).

Note: Use lower end of the dosing range when anesthesia is maintained with an inhaled anesthetic agent, with the redosing interval guided by monitoring with a peripheral nerve stimulator.

-ICU paralysis (eg, facilitate mechanical ventilation) in selected adequately sedated patients (Darrah, 1989; Greenberg, 2013; Murray, 2002; Rudis, 1997): I.V.: Initial bolus dose: 0.08-0.1 mg/kg, then a continuous I.V. infusion of 0.8-1.7 **mcg**/kg/**minute** (0.048-0.102 **mg**/kg/**hour**); monitor depth of blockade every 1-2 hours initially until stable dose, then every 8-12 hours. Usual maintenance infusion dose range: 0.8-1.2 **mcg**/kg/**minute** (0.048-0.072 **mg**/kg/**hour**).

-*Dosage adjustment* (Rudis, 1996; Rudis, 1997): Adjust rate of administration in increments of 0.3 **mcg**/kg/**minute** (or 0.018 **mg**/kg/**hour**) or by 50% reductions of previous dose according to peripheral nerve stimulation response or desired clinical response. Discontinue infusion if neuromuscular function does not return.

Note: When possible, minimize depth and duration of paralysis. Stopping the infusion daily 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; Segredo, 1992).

-*Intermittent bolus dosing* (Hunter, 1985): 0.1-0.2 mg/kg/dose; may be repeated when neuromuscular function returns

-Control of refractory shivering in adequately sedated patients during therapeutic hypothermia after cardiac arrest (unlabeled use; Bernard, 2002; Nolan, 2003; Polderman, 2009): I.V.: 8-12 mg; redose as needed to control shivering. **Note:** Duration of action prolonged in hypothermic patients. May mask seizure activity.

Renal Impairment:
In general, patients with renal impairment do not experience clinically significant prolongation of neuromuscular blockade with vecuronium; however, in patients who are anephric, the clinical duration is prolonged.

Hepatic Impairment:
Dose reductions are necessary in patients with liver disease.

Common side effects: <1% (Limited to important or life-threatening): Acute quadriplegic myopathy syndrome (prolonged use), Bradycardia, circulatory collapse, edema, flushing; hypersensitivity reaction (hypotension, tachycardia, erythema, rash, urticaria); itching, myositis ossificans (prolonged use), rash

Pregnancy Risk Factor: C