

Class

Benzodiazepine, Anti-Convulsive, Short/Intermediate Acting Sedative/Hypnotic

Pharmacologic Properties

Midazolam is a short-acting sedative hypnotic of the benzodiazepine family that increases the action of gamma-aminobutyric acid (GABA), the major inhibitory neurotransmitter in the central nervous system causing sedative, anxiolytic, amnesic, and hypnotic effects. Midazolam depresses the limbic system, thalamus, and hypothalamus resulting in profound sedation and muscle relaxation. The inhibitory nature of the drug also provides anti-epileptic activity that terminates and prevents seizures.

Indications

- Status epilepticus [Protocol 16](#), [Protocol 16P](#).
- Behavioral emergencies in patients with severe agitation or aggressive behavior resulting in interference with patient care or patient/crew safety [Protocol 39](#).
- Procedural sedation (intubation [Protocol 7](#), [Protocol 7P](#); electrical therapy [Protocol 9](#), [Protocol 9P](#)).

Contraindications

- Acute alcohol intoxication or overdose
- Do not administer to neonatal patients
- Respiratory insufficiency
- Shock or coma
- Known hypersensitivity to benzodiazepines
- Acute narrow-angle glaucoma
- Concomitant use with barbiturates, alcohol, narcotic, or other CNS depressants.

Precautions

- Use extreme caution with intravenous administration - rapid IV bolus may cause hypotension and respiratory depression/arrest
- Effects are exacerbated in the elderly, and when administered to patients who have already ingested another CNS depressant (ETOH, barbiturates, GHB)

Side Effects/Adverse Reactions

Confusion, Drowsiness, Somnolence, Respiratory depression/arrest, Apnea, Hypotension, Headache, Nausea, Vomiting, Cardiac Arrest

Dosage and Administration

Adult

Adult Seizure

- 5 mg slow IV/IM
- Intranasal – via MAD – 0.2 mg/kg (Max single dose 10 mg)
 - Do not administer more than 1 mL per nostril.

Adult Electrical Therapy

- 5 mg slow IV/IM
- Intranasal – via MAD – 0.2 mg/kg (Max single dose 10 mg)
 - Do not administer more than 1 mL per nostril.

Adult Intubation with Sedation

- 2.5 mg slow IV or IM/IN (via MAD)
 - May be repeated with 2.5 mg as needed to maintain sedation to a maximum total dose of 0.1 mg/kg (MAX 10 mg)

Excited Delirium

- 2.5 mg slow IV or IM/IN (via MAD)

Pediatric

Pediatric Seizure

- 0.1 mg/kg (Max single dose 5 mg) slow IV/IO
- IM/Intranasal – via MAD – 0.2 mg/kg (Max single dose 5 mg)
 - Do not administer more than 0.5 mL per nostril.
- May be repeated once if the seizure activity continues (Max total dose of 10 mg)

Pediatric Electrical Therapy

- 0.1 mg/kg (Max single dose 5 mg) slow IV/IO
- IM/Intranasal – via MAD – 0.2 mg/kg (Max single dose 5 mg)
 - Do not administer more than 0.5 mL per nostril.

Pediatric Intubation with Sedation

- 0.05 – 0.5 mg/kg slow IV or IM/IN (via MAD)
 - Do not administer more than 0.5 mL per nostril.