

MIDAZOLAM (VERSED)

PHARMACOLOGY & MECHANISM OF ACTIONS:

- ❑ Midazolam is a short acting benzodiazepine CNS depressant with significant beneficial amnesia effects making it especially useful for cardioversion.
- ❑ Causes sedation or unconsciousness, depending on the dose
- ❑ Decreases anxiety and agitation
- ❑ Causes anterograde amnesia
- ❑ Has anti-convulsant effect
- ❑ With IV administration, onset is 2-3 minutes and duration is 30-60 minutes
- ❑ With IM/IN administration, onset is 15 minutes, and duration is 2-4 hours
- ❑ Conjugated by the liver, then eliminated by the kidneys

INDICATIONS:

- ❑ Status epilepticus (generalized seizure which has lasted longer than 5 minutes or seizure recurs before patient returns to consciousness. Do not give unless patient is actively seizing.
- ❑ Sedation and amnesic effect prior to pacing, cardioversion
- ❑ Sedation post cardiac arrest/RSI management to maintain ETT placement.
- ❑ Chemical restraint of combative, uncontrollable patients
- ❑ May be used in conjunction with pain management

CONTRAINDICATIONS:

- ❑ Allergy to Versed or other benzodiazepines
- ❑ Coma
- ❑ Profound hypotension
- ❑ Acute narrow angle glaucoma
- ❑ Severe alcohol intoxication

ADMINISTRATION:

ADULT	PEDIATRIC
<div style="display: flex; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg); background-color: red; color: white; padding: 5px; font-weight: bold; margin-right: 5px;">PARAMEDIC</div> <div style="flex-grow: 1;"> <p><i>SEDATION, CHEMICAL RESTRAINT, STATUS SEIZURE.</i></p> <ul style="list-style-type: none"> ❑ 2.5 – 5 mg IV/IO/IM/IN q 5 minutes <p><i>IN CONJUNCTION WITH PAIN MEDICATIONS.</i></p> <ul style="list-style-type: none"> ❑ 1 - 3 mg IV/IO/IM/IN </div> </div>	<div style="display: flex; align-items: center;"> <div style="flex-grow: 1;"> <p><i>SEDATION, CHEMICAL RESTRAINT, STATUS SEIZURE.</i></p> <ul style="list-style-type: none"> ❑ 0.1 mg/kg IV/IO -OR- 0.2 mg/kg IM/IN <p><i>IN CONJUNCTION WITH PAIN MEDICATIONS.</i></p> <ul style="list-style-type: none"> 0.1 mg/kg IV/IO -OR- 0.2 mg/kg IM/IN </div> <div style="writing-mode: vertical-rl; transform: rotate(180deg); background-color: red; color: white; padding: 5px; font-weight: bold; margin-left: 5px;">PARAMEDIC</div> </div>

PRECAUTIONS & SIDE EFFECTS:

- ❑ Apnea
- ❑ Respiratory depression
- ❑ Hypotension - Consider using a lower dose of Midazolam (1-2mg) in patients with BP ~ 100 mm/hg.
- ❑ Consider using a lower dose of Midazolam in patients over 70 years old.
- ❑ Occasional paradoxical agitation, involuntary movements, or combativeness (consider cerebral hypoxia or incorrect dose).
- ❑ Hypersensitivity reactions (itching, hives)
- ❑ Nausea
- ❑ Vomiting
- ❑ Headache
- ❑ Pregnancy Category D—use only in life threatening situations with pregnant patients.

MIDAZOLAM (VERSED) CONT.

SPECIAL NOTES:

- ❑ Sedation can last up to several hours.
- ❑ COPD patients are extremely sensitive to the respiratory-depressant effect and may develop prolonged depressed respirations and hypoxia.
- ❑ Congestive heart failure patients may have delayed onset of action, prolonged duration, unexpected arrhythmias or hypotension.
- ❑ Renal failure patients may have an altered response. May have unpredictable onset and prolonged duration.
- ❑ Chronic liver failure patients may have altered effect due to altered metabolism, slow elimination with prolonged duration of action.
- ❑ Acute severe illness, dehydration, or electrolyte disturbance patients may develop severe hypotension.
- ❑ Will have an additive effect with concurrent use of narcotics, benzodiazepines, alcohol or other legal/illegal CNS depressants.
- ❑ Control of seizures with IM use may be rapid however, onset of action for agitation control may be delayed.
- ❑ When used as a single agent, respiratory depression and even apnea is the greatest concern and can occur in up to 20% of patients who receive it intravenously. In combination with narcotics this complication is far more frequent.
- ❑ Always watch for respiratory depression (most common side effect), the patient must be monitored closely with pulse oximetry when possible. Prior to the IV administration of Midazolam in any dose, the immediate availability of oxygen, resuscitative equipment, and personnel for airway management must be ensured.
- ❑ Most likely to produce respiratory depression in elderly and young patients and in patients who have taken other depressant drugs, especially alcohol, narcotics, and barbiturates.
- ❑ The effective dosage will generally be reduced in elderly or debilitated patients, so start with lower doses in patients over the age of 60.
- ❑ Additional uncommon side effects that have been reported after the administration of Midazolam include hiccoughs, ventricular ectopy, arrhythmias, and bronchospasm.
- ❑ Paradoxical excitement or stimulation sometimes occurs and may be manifested as agitation, involuntary movements, hyperactivity or combativeness.
- ❑ IV incompatible with Lasix and sodium bicarbonate. Flush tubing well.