



MAGNESIUM SULFATE

Escambia County, Florida - ALS/BLS Medical Protocol

ACTIONS

Magnesium is an important cofactor for enzymatic reactions and plays an important role in neurochemical transmission and muscular excitability.

Magnesium prevents or controls convulsions by blocking neuromuscular transmission and decreasing the amount of acetylcholine liberated at the end-plate by the motor nerve impulse.

Magnesium is said to have a depressant effect on the central nervous system, but it does not affect the mother, fetus or neonate when used as directed in eclampsia and pre-eclampsia. Magnesium acts peripherally to produce vasodilation.

INDICATIONS

1. Parenteral anticonvulsant for the prevention and control of seizures in severe toxemia of pregnancy.
2. Torsades de pointes.
3. Suspected hypomagnesemic state (eg. chronic alcoholism and chronic use of diuretics).
4. Refractory ventricular fibrillation.

CAUTIONS

Because magnesium is removed from the body solely by the kidneys, the drug should be used with caution in patients with renal impairment.

Monitoring magnesium serum levels and the patient's clinical status is essential to avoid the consequences of overdose in toxemia.

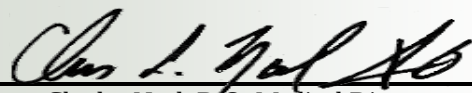
Clinical indications that it is safe to give magnesium include the presence of patellar reflex (knee jerk), absence of hypotension, absence of pulmonary edema and absence of respiratory depression (approximately 16 breaths or more/minute).



Approved: 03/29/2013
Version: 3.1

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WARNINGS

Intravenous use of magnesium sulfate should not be given to mothers with toxemia of pregnancy during the two hours immediately preceding delivery.

Magnesium Sulfate Injection USP, 50% must be diluted to a concentration of 20% or less prior to IV infusion.

ADVERSE REACTIONS

Adverse effects of Magnesium Sulfate IV are usually the result of magnesium intoxication.

Signs of hypermagnesemia include: flushing, sweating, hypotension, depression of reflexes, flaccid paralysis, hypothermia, circulatory collapse, depression of cardiac function and central nervous system depression.

These symptoms can precede fatal paralysis.

DOSAGE

For eclamptic seizures: Dosage: 4 gm over 5 minutes
(DO NOT run faster than 1 gram per minute.)

Draw up 1 gram in a 20cc syringe. Fill remaining 20cc syringe with D5W (20cc = 1 gram). Push 20cc solution (1 gram) IV over at least 1 minute. If more than 1 gram is required, repeat the process.

If any of the below occur during Magnesium Sulfate infusion, stop infusion:

- Hypotension
- respiratory paralysis
- decreased cardiac function



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- pulmonary edema
- loss of patella (knee) reflexes

For torsades de pointes: Dosage: 2 gm over 2-3 minutes
(DO NOT run faster than 1 gram per minute.)

Draw up 1 gram in a 20cc syringe. Fill remaining 20cc syringe with D5W (20cc = 1 gram). Push 20cc solution (1 gram) IV over at least 1 minute. If more than 1 gram is required, repeat the process.

If any of the below occur during Magnesium Sulfate infusion, stop infusion:

- Hypotension
- respiratory paralysis
- decreased cardiac function
- pulmonary edema
- loss of patella (knee) reflexes



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