

for convulsing & hypertensive treatment



*in pre-eclampsia
eclampsia &
post partum eclampsia*

the most logical choice should be

MAGNESIUM SULPHATE
Injection 500mg/ml

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Indications:

- Emergency treatment in eclampsia
- Pre-eclampsia
- Post partum eclampsia and pre-eclampsia

Protocol:

Loading Dose:

- 4gm (8cc) Magnesium Sulphate + 12cc of water in 20cc disposable syringe making 20% solution to be given I/V over 20minutes.
- 5gm I/M into each buttock.

Maintenance Dose: 5gm I/M every 4 hours to be given and continued for 24 hours after the last fit. **Monitoring of Respiratory rate (> 16/min), Urine out put (>25ml/min), and reflexes (Knee jerks) should be present. For Recurring convulsion 2gm Magnesium Sulphate-10cc water (rotate 14cc) given over 10 minutes.**

PRESCRIBING INFORMATION

Description: Magnesium Sulphate injection is a sterile, nonpyrogenic solution of magnesium sulphate in water for injection. Each ml of the 50% solution contains 500mg of Magnesium sulphate Heptahydrate. The solution contains no bacteriostatic agent or other preservatives. Magnesium sulphate Heptahydrate is chemically designated $MgSO_4 \cdot 7H_2O$ and occurs as a white, bitter, crystalline powder which is freely soluble in water. **CLINICAL PHARMACOLOGY:** Magnesium is the second most plentiful cation of the intracellular fluids. It is essential for the activity of any enzyme system and plays an important role with regard to neurochemical transmission and muscular excitability. Deficits are accompanied by a variety of structural and functional disturbances. Some of the effects of magnesium on the nervous system are similar to those of calcium. An increased concentration of magnesium into the extracellular fluid causes depression of the central nervous system (CNS). Magnesium has a depressant effect on skeletal muscle. Abnormally low concentrations of magnesium in the extracellular fluid result in increased acetylcholine release and increased muscle excitability that can produce tetany. Magnesium slows the rate of SA nodal impulse formation. Higher concentrations of magnesium (greater than 15 mEq/L) produce cardiac arrest in diastole. Excess magnesium causes vasodilation by both a direct action on blood vessels and ganglionic blockade. Magnesium is excreted principally by the kidney by glomerular filtration. Magnesium sulphate injection may be of therapeutic value in the following conditions: As a CNS depressant, primarily in pre-eclampsia and eclampsia of pregnancy. As an electrolyte replenisher for magnesium deficiency and magnesium deficiency to maintain normal neuromuscular irritability. **CONTRAINDICATIONS:** Magnesium sulphate injections, should not be administered parenterally in patients with heart block or myocardial damage. **WARNINGS:** The principal hazard in parenteral magnesium therapy is the production of abnormally high levels of magnesium in the plasma. The most immediate danger to life is respiratory depression. A Preparation of Calcium such as the gluconate or gluceptate, should be at hand for intravenous administration as an antidote. Magnesium sulphate injection can cause fetal harm when administered to a pregnant woman. When magnesium sulphate injection, is administered to a toxic mother, the newborn is usually not compromised. When Magnesium sulphate is administered intravenously by a continuous infusion for longer than 24 hours before delivery, the possibility of the baby's showing signs of neuromuscular or respiratory depression of the newborn should be considered, since fetal toxicity can occur. A baby with hypermagnesaemia may require resuscitation and assisted ventilation. If this drug is used during pregnancy, or if the patient becomes pregnant while taking this drug, the patient should be apprised of the potential hazard to the fetus. **PRECAUTION - GENERAL:** Administer with caution if flushing and sweating occurs. When barbiturates, narcotics or other hypnotics (or systemic anesthetics) are to be given in conjunction with magnesium, their dosage should be adjusted with caution because of additive CNS depressant effect of magnesium. A preparation of calcium salt should be readily available for intravenous administration to counteract potential serious signs of magnesium intoxication. Since Magnesium is excreted almost entirely by the kidneys, it should be given very cautiously in the presence of serious impairment of renal function. **LABORATORY TESTS:** Magnesium sulphate injection, should not be given unless hypermagnesaemia has been confirmed and the serum concentration of magnesium is monitored. The normal serum level is 1.5 to 2.4 mEq/L. **PREGNANCY CATEGORY D:** See warnings. **NURSING MOTHERS:** It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when Magnesium sulphate injection, is administered to a nursing woman. **USAGE IN CHILDREN:** Safety and effectiveness in children have been established. **DRUG INTERACTIONS:** When barbiturates, isotonic hypnotics (or systemic anesthetics), or other central nervous system depressants are to be given in conjunction with magnesium their dosage should be adjusted with caution because of the additive central nervous system depressant effects of magnesium. Central nervous system depression and peripheral transmission defects produced by magnesium may be antagonized by calcium. **ADVERSE REACTIONS:** Principal adverse reactions are related to the high plasma levels of magnesium and include flushing, sweating, hypotension, circulatory collapse, and cardiac and central nervous system depression. Respiratory depression is the most life-threatening effect. **OVERDOSAGE:** Hypermagnesaemia is manifested by muscle weakness, hypotension, ECG changes, sedation, and confusion. As plasma concentration of magnesium begin exceed 4mEq/L, the deep-tendon reflexes are decreased and may be absent at levels approaching 10 mEq/L. At 12 to 15 mEq/L, respiratory paralysis is a potential hazard; the respiratory effect can be antagonized to some extent by the intravenous administration of calcium salts. In cases of severe renal impairment, symptomatic hypermagnesaemia may be an indication for dialysis. Although man usually tolerates high concentrations of magnesium in plasma, there are occasional instances when cardiac consequences may be seen in the form of completed heart block at concentrations well below 10 mEq/L. Before the parenteral administration of each dose, the respiratory rate should be at least 16 per minute and urinary function should be adequate. In the event of overdosage, assisted ventilation must be provided until calcium can be given intravenously. Peritoneal dialysis or hemodialysis should be given in cases of extreme hypermagnesaemia. When Magnesium sulphate injection, is administered parenterally in doses that are sufficient to induce hypermagnesaemia, the drug has a depressant effect on the central nervous system and, via the peripheral neuromuscular junction, on muscle. **DOSAGE AND ADMINISTRATION:** INTRAMUSCULAR: Adult and older children for severe hypomagnesaemia - 5gm (10ml of 50% solution) daily in divided doses; administration is repeated daily until serum levels have returned to normal. If deficiency is not severe (1g (2 ml of 50% solution) can be given once or twice daily). Serum magnesium levels should be normal to continued dosage. INTRAVENOUS: 1 to 4g Magnesium sulphate injection, 50% may be given intravenously in 10% to 20% solution, but with great caution: the rate should not exceed 1.5ml of 10% solution or equivalent per minute until relaxation is obtained. INTRAVENOUS INFUSION: 4g to 150ml of 5% Dextrose injection, at a rate not exceeding 3ml per minute. **USUAL DOSE RANGE:** 1 to 40g daily. **ELECTROLYTE REPLENISHER:** Intramuscular 1 to 2g in 50% solution four times a day until serum magnesium is within normal limits. **USUAL PEDIATRIC DOSE:** Intramuscular 20 to 40 mg/kg of body weight in a 20% solution repeated as necessary. For ECG monitoring 1g to 2g in 20% solution is given intramuscularly. Subsequently, 1g is given every 30 minutes until relief is obtained. The Blood pressure should be monitored after each injection. Patients should be visually inspected for particulate matter and discoloration prior to administration, whenever solution and container permit. **Presentation and prices:** 5x2 ml ampoules, 1 x 10 ml ampoule



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