

# MAGNESIUM SULFATE

## PHARMACOLOGY & MECHANISM OF ACTIONS:

- ❑ Antiarrhythmic
- ❑ Anticonvulsant
- ❑ Magnesium is a cation that is present in human cells and intracellular fluid
- ❑ The effects of hypomagnesaemia in cardiac arrest are well known
- ❑ Hypomagnesaemia is associated with a high frequency of cardiac arrhythmias (particularly refractory V. Fib.), cardiac insufficiency and sudden cardiac death.
- ❑ Magnesium sulfate may be effective in the treatment of torsades de pointes, even in the absence of hypomagnesaemia.

## INDICATIONS:

- ❑ Recurrent or refractory ventricular fibrillation and pulseless ventricular tachycardia following initial measures with defibrillation, epinephrine and antiarrhythmic.
- ❑ Cardiac arrest associated with Torsades de points or suspected hypomagnesemic state (e.g. alcoholics).
- ❑ Eclampsia (seizures accompanying pregnancy): active seizure after 20<sup>th</sup> week of pregnancy, or within 48 hrs post-partum.
- ❑ Severe asthma in prolonged transports

## CONTRAINDICATIONS:

- ❑ Any patient with heart block
- ❑ Patient in active labor

## 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><b><i>CARDIAC INDICATIONS/HYPOMAGNESMIC STATE</i></b></p> <ul style="list-style-type: none"> <li>❑ Mix 2.0 g in 20 mL NS for 10% solution; administer over 2 minutes IV</li> </ul> <p><b><i>PRE-ECLAMPSIA</i></b> Active seizure after 20<sup>th</sup> week of pregnancy or within 48 hours post-partum.</p> <ul style="list-style-type: none"> <li>❑ Mix 2.0-2.5 g in 20 mL NS for 10% solution administer over 2 to 3 minutes.</li> </ul> <p><b><i>SEVERE ASTHMA IN PROLONGED TRANSPORTS</i></b></p> <ul style="list-style-type: none"> <li>❑ OLMC: 2.0-2.5 g IV over 20 minutes</li> </ul> </div> </div>	<div style="display: flex; align-items: center;"> <div style="flex-grow: 1;"> <p><b><i>CARDIAC INDICATIONS/HYPOMAGNESMIC STATE</i></b></p> <ul style="list-style-type: none"> <li>❑ Mix 2 g in 20 mL NS for 10% solution</li> <li>❑ Give weight appropriate amount (25 to 50 mg/kg)</li> </ul> </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:

- ❑ Flushing
- ❑ Sweating
- ❑ Mild bradycardia
- ❑ Hypotension
- ❑ Severe hypomagnesaemia may produce depressed reflexes, flaccid paralysis, circulatory collapse, respiratory paralysis and diarrhea. This would not be expected unless unrecognized preexisting hypermagnesemia is present.