MAGNESIUM SULPHATE

(Revised: October 2020)

TYPE:	Electrolyte solution [no schedule]

PRESENTATION:	2.5g in 5 ml (50% solution) – glass ampoule

ACTIONS:	Magnesium is the second most abundant intracellular cation. Less that 1% is present in extracellular fluid. Magnesium is involved in the processes regulating sodium and potassium movement across cell membranes and, as such, it may promote myocardial cell membrane stability.

USES:	**ICP**	1. Torsades de pointes/polymorphic VT)	
	ICP	2. Refractory VF (3rd drug)	
	ICP	3. Seizures due to eclampsia	**AP**
	ICP	4. Symptomatic pre-eclampsia – hypertensive pregnant patient (≥20/40 to 6/52 post partum) presenting as unwell (altered LOC, headache, abdominal pain, visual disturbances, etc)	

ADVERSE EFFECTS:	Rare – more common if serum magnesium is normal: 1. Respiratory depression 2. Nausea and vomiting 3. Hypotension 4. Confusion 5. Bradycardia

CONTRA-INDICATIONS:	1. AV block 2. Renal failure 3. Hepatic failure

PRECAUTION:	Myasthenia gravis

continues over

MAGNESIUM SULPHATE – cont.

DOSES:

ADULT:		
ICP	**With cardiac output:** 2.5g IV/IO – diluted up to 10ml with normal saline, given over 5 minutes.	
ICP	**Refractory VF:** 2.5g IV/IO – over 30 – 60 seconds	
ICP	**Torsades de pointes:** 2.5g IV/IO – over 30 – 60 seconds	
ICP	**Pre-eclampsia:** 2.5g IV/IO via Springfusor (made up to 7ml total volume with normal saline; 7ml will run over 10 minutes)	
ICP	**Seizures due to eclampsia:** 2.5g IV/IO over 30 – 60 seconds, *followed by*	**AP**
ICP	2.5g IV/IO via Springfusor (made up to 7ml total volume with normal saline; 7ml will run over 10 minutes)	
PAEDIATRIC: *(unusual)*		
ICP	Dose is 50mg/kg (to max of 2.5g). Dilute entire ampoule up to 10ml = 250mg/ml. Discard excess. **With cardiac output:** give calculated dose IV/IO over 3 – 5 minutes. **No cardiac output:** give calculated dose IV/IO over 30 – 60 seconds.	

SPECIAL NOTE:

prolonged hypotension post-magnesium administration – if unresponsive to fluids, patient may be treated with IV calcium.