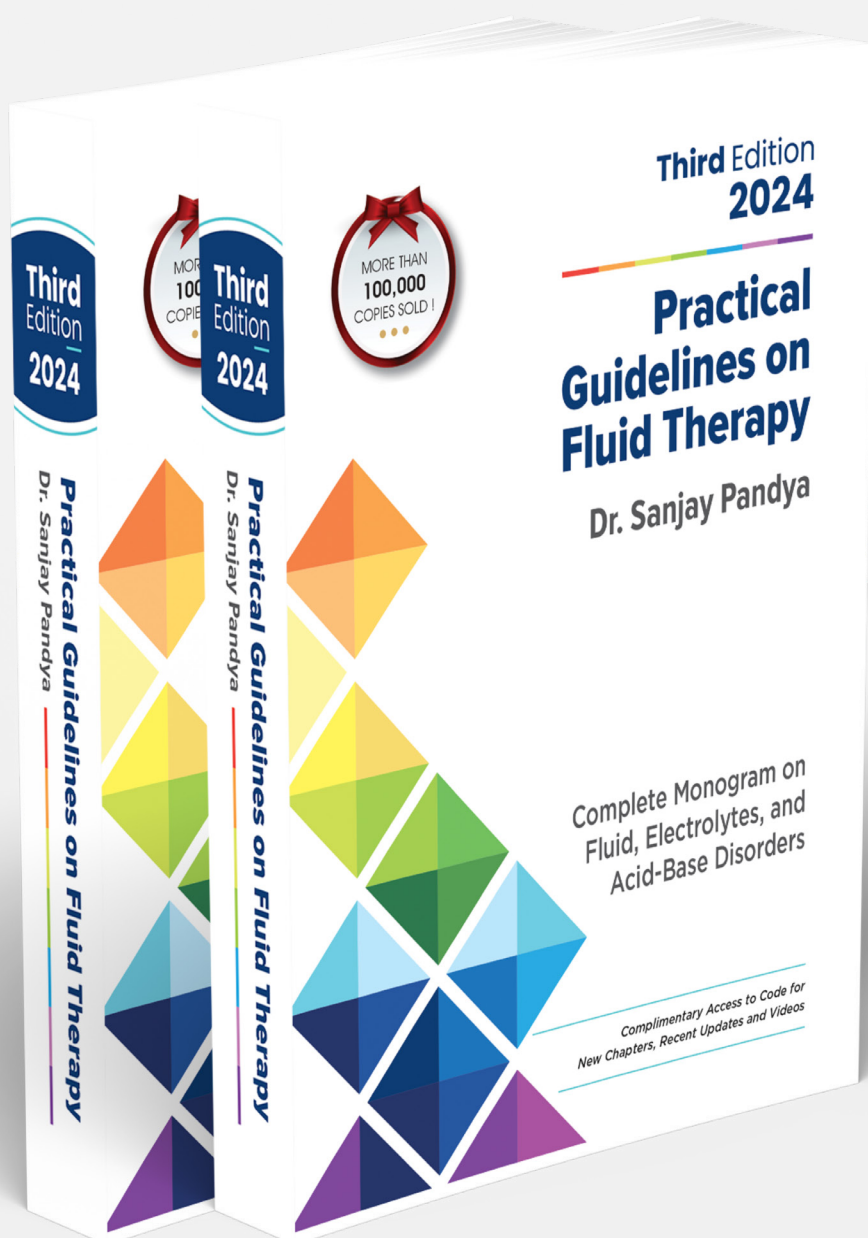


Chapter 12: Magnesium Sulfate



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Injection Magnesium sulfate (MgSO_4) is the most common parenterally used magnesium salt in clinical practice.

COMPOSITION

Injection Magnesium sulfate is available in different concentrations.

Inj. 50% Magnesium Sulfate

Each ml contains:

Magnesium Sulfate USP 500 mg
4.06 mEq or 2.03 mmol Magnesium ions
Osmolarity 4060 mOsm/L

50% Magnesium Sulfate per ampoule: 1 gm/2 ml and 5 gm/10 ml

Inj. 20% Magnesium Sulfate

Magnesium Sulfate USP 2 gm/10 ml

Inj. 10% Magnesium Sulfate

Magnesium Sulfate USP 1 gm/10 ml

Conversion relationships: Magnesium Sulfate 1 gm = 4 mmol mg = 8 mEq mg

PHARMACOLOGICAL BASIS

Magnesium is the second most common intracellular cation. It is an essential co-factor in many biochemical reactions and plays a vital role in nerve transmission, neurochemical transmission, cardiac excitability, muscular excitability, and vasomotor tone. It also affects the regulation of calcium and potassium.

A. Preeclampsia and eclampsia

Magnesium sulfate is an effective treatment for eclampsia, but the exact

mechanism of action remains unclear and is suggested to be multi-factorial (works through both vascular and neurological mechanisms) [1]. Different proposed mechanisms are:

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