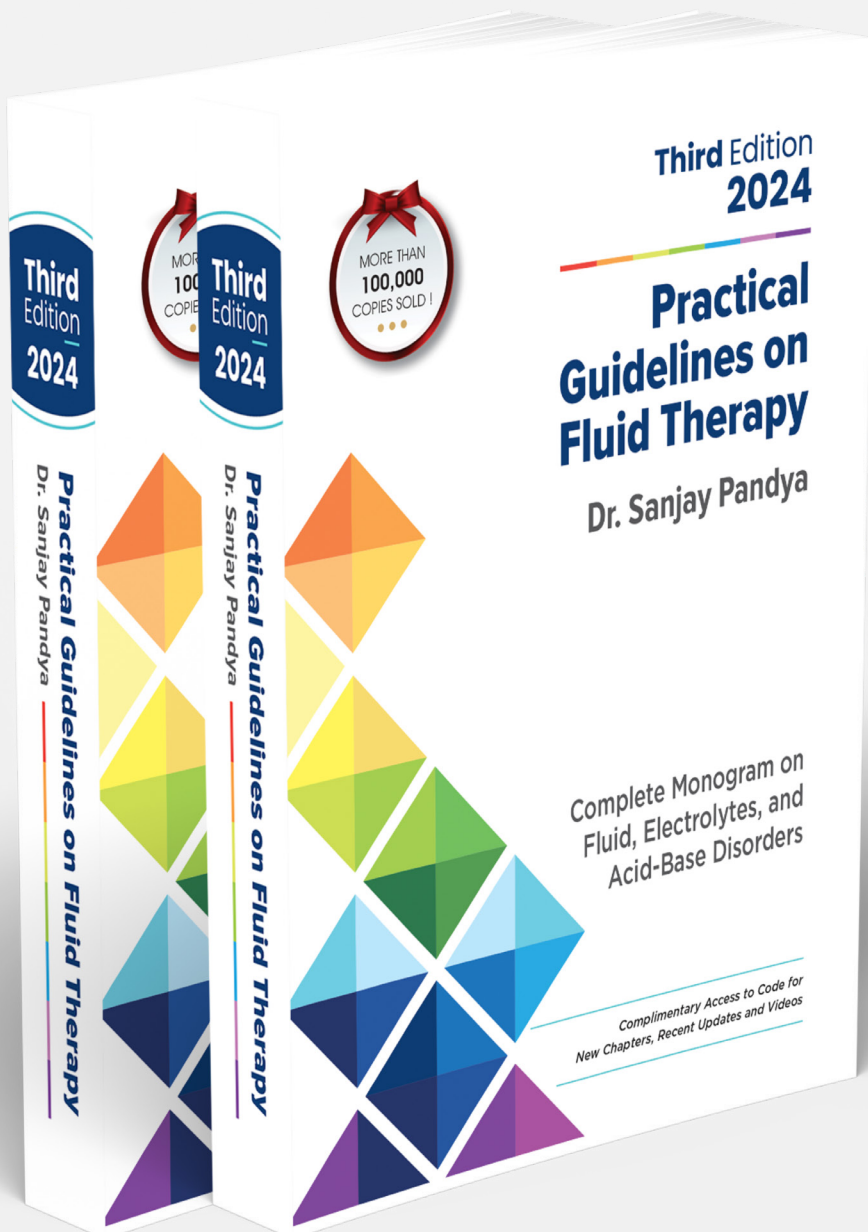




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Chapter 11: Hypertonic Saline



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11

Hypertonic Saline

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Hypertonic saline (HS) is a concentrated form of sodium chloride dissolved in water, and 3% and 5% hypertonic saline are commonly used solutions in clinical practice.

COMPOSITION

Inj. 3% Hypertonic Saline

Each 100 ml of contains:

Sodium	51.3 mEq
Chloride	51.3 mEq
Osmolality	1026.0 mOsm/L

100 ml of 3% NaCl contains: 3 gm of Sodium Chloride

Inj. 5% Hypertonic Saline

Each 100 ml of contains:

Sodium	85.5 mEq
Chloride	85.5 mEq
Osmolality	1710.0 mOsm/L

100 ml of 5% NaCl contains: 5 gm of Sodium Chloride

PHARMACOLOGICAL BASIS

Hypertonic saline solutions have higher sodium chloride concentration and serum osmolality as compared to normal serum values.

A. High sodium concentration promptly corrects hyponatremia

Sodium concentration of 3% and 5% hypertonic saline is 513 mEq/L and 855 mEq/L respectively compared to normal plasma concentration of 140 mEq/L. As a high sodium concentration of hypertonic saline can rapidly raise sodium and reduce cerebral edema, it is recommended in the treatment of life-threatening hyponatremia. Because of substantially higher concentrations of salt, this solution is selected to provide a large amount of sodium in a small amount of fluid (i.e., in a patient with

euvolemic or hypervolemic hyponatremia who needs salt supplementation, but fluid restriction).

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