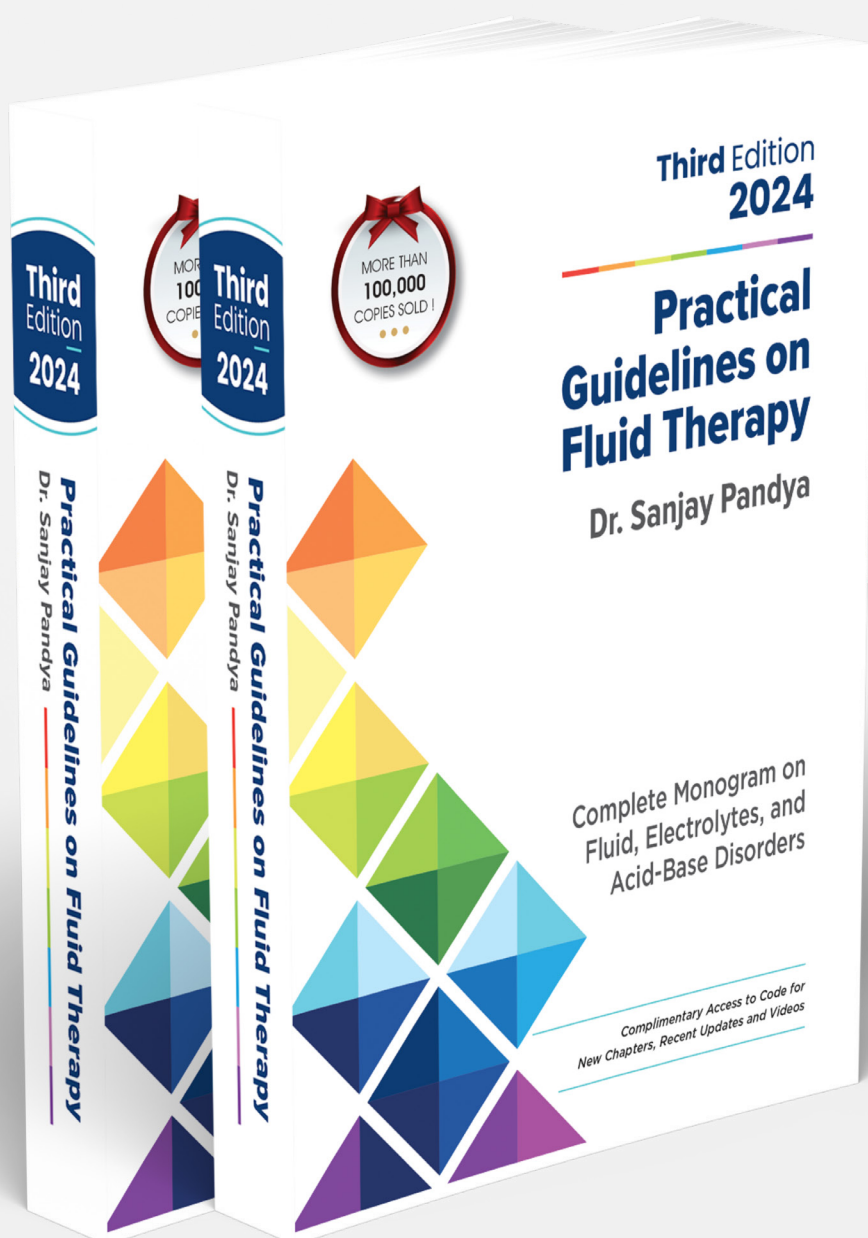


## Chapter 4:

## Balanced and Multi-electrolyte Solutions



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# 4

## Balanced and Multi-electrolyte Solutions

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Balanced and a few multi-electrolyte solutions are discussed in this chapter. Crystalloids with a composition closely resembling extracellular fluid have been termed 'balanced' or 'physiological' solutions [1, 2]. Balanced crystalloids are also distributed throughout the extracellular fluid (ECF) and are, therefore, of similar efficacy to normal saline (0.9% NaCl) in terms of plasma volume expansion.

Balanced crystalloids contain somewhat less sodium and significantly less chloride and therefore have advantages over normal saline solution when used

for resuscitation or routine maintenance. Due to the instability of bicarbonate-containing solutions in plastic containers, alternative buffers such as lactate, acetate, gluconate, and malate are used to provide bicarbonate in balanced crystalloids [3]. Ringer's lactate is the most widely used balanced crystalloid.

### RINGER'S LACTATE (RL)

Ringer's lactate solution is also known as Hartmann's solution, sodium lactate solution, or lactated Ringer's solution (LR).

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