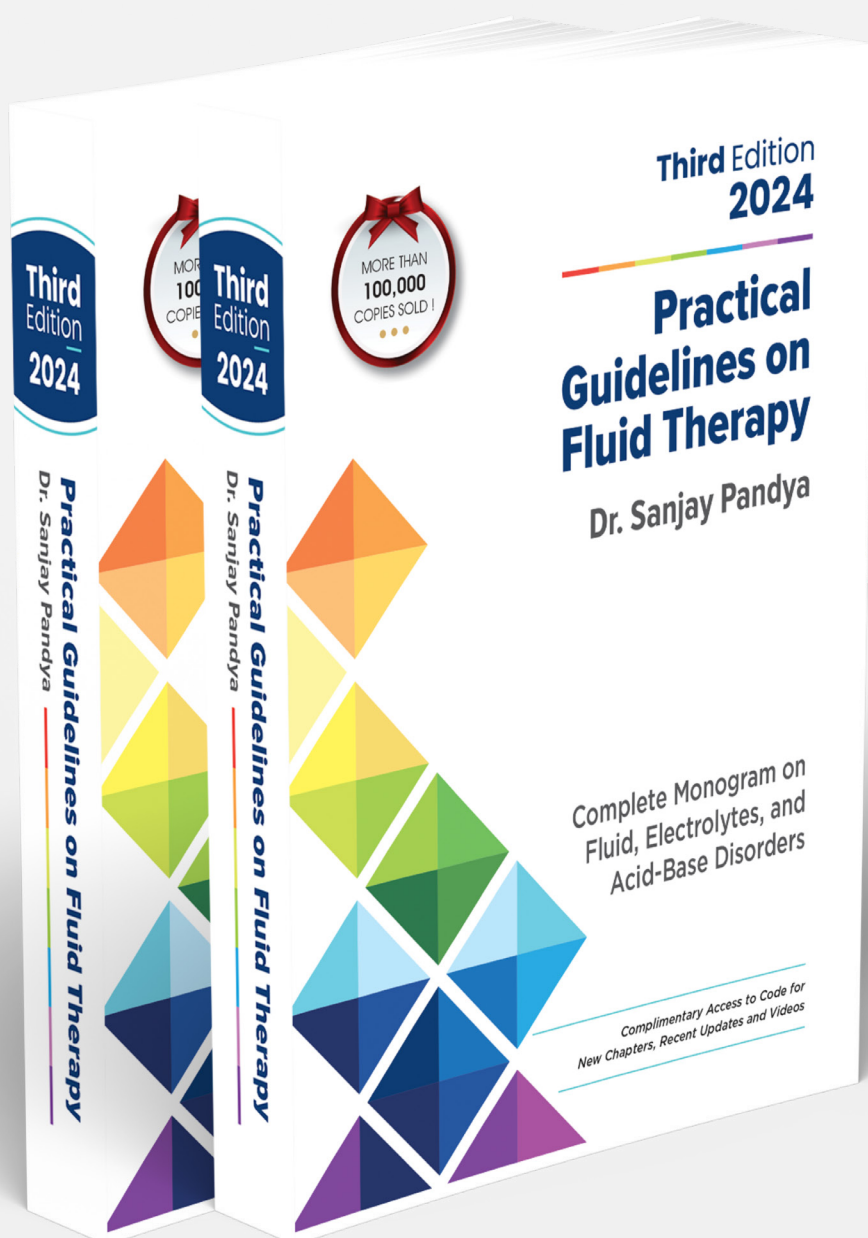


## Chapter 42:

### Preoperative Fluid Therapy



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# 42 | Preoperative Fluid Therapy

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Fluid therapy in surgical patients is a critical part of perioperative care that involves the administration of fluids to maintain the patient's hemodynamic stability, organ perfusion, and hydration status during and after surgery.

Timely administered intravenous fluid is vital and can be lifesaving in surgical patients. The type and amount of fluids administered depend on various factors, such as the patient's preoperative status, the extent of surgical trauma, the duration of surgery, and associated illnesses and comorbid conditions. Proper fluid management can help reduce complications after major surgery, decrease stay in the hospital, and improve patient outcomes [1].

Understanding the possible fluid and electrolyte imbalances in surgical patients and their proper management is important to achieve optimal outcomes after surgery.

## NEED FOR SPECIAL CONSIDERATIONS

In surgical patients, several factors can modify the normal physiology of fluid

and electrolyte balance in the body, which requires special consideration. Some important factors that need to be considered are:

- In surgical patients, the secretion of ACTH increases due to acute stress. This increased adrenocorticotrophic hormone (ACTH) level stimulates the adrenal glands to secrete two hormones: a large amount of cortisol to fight acute stress and aldosterone, which results in sodium retention and urinary loss of potassium. Hypovolemia during major surgery also leads to increased aldosterone secretion. The increased aldosterone secretion for the first 2-3 postoperative days leads to increased sodium and water reabsorption.
- Postoperative pain and stress can cause an increase in antidiuretic hormone (ADH) secretion from the posterior pituitary gland during the first 2-3 postoperative days. By reducing urine output and increasing water reabsorption, ADH helps in the correction of hypotension in postoperative patients. It is important to remember that the amount of maintenance fluid required on the first

postoperative day is lower due to the increased ADH secretion.

- Fluid deficit resulting from preoperative oral fluid restriction (nothing

by mouth-NPO) must be taken into account and replenished prior to or during the surgery to maintain proper hydration.

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