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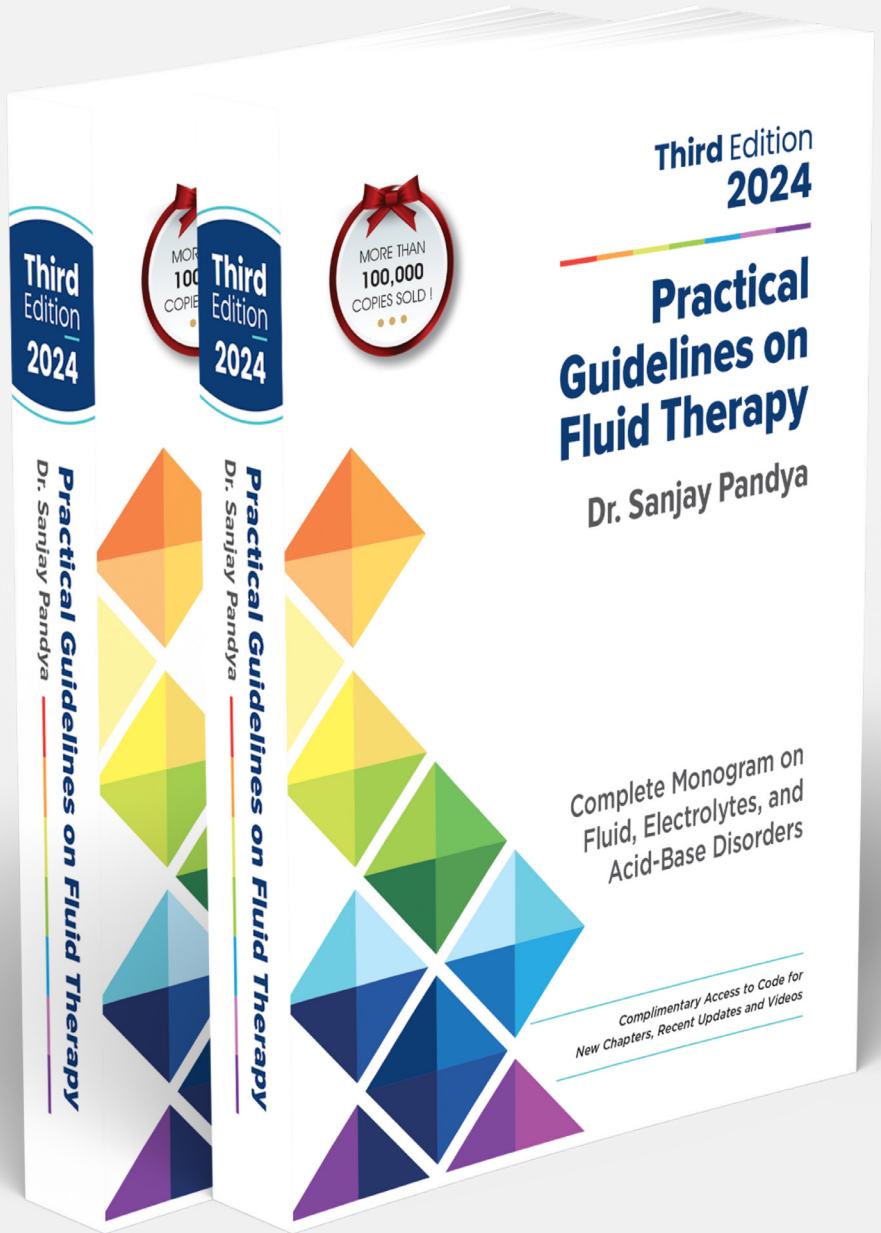
Chapter 36:

Hepatic Encephalopathy



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36 Hepatic Encephalopathy

Hepatic encephalopathy (HE) is a potentially reversible condition characterized by a spectrum of neurological or psychiatric abnormalities ranging from subclinical alterations to coma, which occurs as one of the many complications of decompensated liver disease or portosystemic shunting [1]. About 30 to 45% of patients with cirrhosis develop overt hepatic encephalopathy [2], which is associated with significant morbidity, mortality, high healthcare cost, and a huge burden on patients and their caregivers [3, 4].

PATHOPHYSIOLOGY

The pathophysiology of HE is poorly understood, it is often multifactorial, and different abnormalities may be present at the same time, leading to the development of HE [5].

The various pathogenetic mechanisms proposed in the development of HE are [5, 6]:

- Neurotoxins (Ammonia, benzodiazepines, benzodiazepine-like compounds such as gamma-aminobutyric acid, and manganese deposition within the basal ganglia).
- Alteration in neurotransmission due to increased GABA - neurotransmitters and serotonin activity in HE.
- False neurotransmitters such as tyramine, octopamine, and beta-phenylethanolamines may compete with the normal catecholamine neurotransmitters.
- Altered brain energy due to impaired hepatic gluconeogenesis in the terminal stages of liver failure.
- The systemic inflammatory response may exacerbate the harmful effects of hyperammonaemia on the brain [7].
- Alterations of the blood-brain barrier contribute to an increased influx of varieties of neurotoxic substances into the brain, which may contribute to HE.

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