

The brain in critical patients: how to monitor and how to protect?

Critical illness affects the brain physiology regardless the underlying condition, mediated by a wide range of mechanisms, including impairment of neuronal oxygenation, neuroinflammation and neurochemical dysfunction. In addition, in some circumstances, medical and surgical therapeutics may also harm the brain even when the primary target is not the Central Nervous System itself.

Short and long term outcomes of critical illness are highly dependent of how clinicians detect CNS dysfunction, anticipating harmful events and protecting an organ so complex as the brain is during a fragile state.

It is intended to review the mechanisms of cerebral dysfunction during critical illness, the monitoring strategies with a special focus on EEG and cerebral oximetry and the possible and effective modes of brain protection.