

Theses

Analysis of the use of electroencephalogram and the bispectral index in the intensive care unit (Abstract)*. Dissertation. João Pessoa, 2010

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This paper reviews the current and future applications of continuous electroencephalography (cEEG) and bispectral index to monitor brain function and physiology of patients with acute neurological disease in the intensive care unit. This monitoring is multimodal due to the limitations of different monitoring and thus have to be monitored several variables at the same time as a clinical neurological examination, the intracranial pressure, cerebral perfusion pressure, capnography, jugular bulb oximetry, computed tomography, brain temperature monitoring, brain PO₂ monitoring, microdialysis and transcranial Doppler. In comatose patients, cEEG may provide otherwise unobtainable information and influence therapeutic management, and also help determine the prognosis

of patients with acute brain injury. This technique is best used for the detection of subclinical seizures, which may frequently occur during or after treatment of convulsive status epilepticus and after many types of acute brain injury, particularly trauma. The other main application of cEEG is as a primary monitor of brain function. cEEG can detect focal cerebral ischemia, such as that caused by vasospasm after subarachnoid hemorrhage, as well as global ischemia related to intracranial pressure elevation and insufficient cerebral perfusion pressure. Other potential applications include prognostication in coma and titration of continuous infusion sedative therapy.

Key words: EEG, electroencephalogram, continuous electroencephalography, ICU, monitor brain function, bispectral index.

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