Transcranial magnetic stimulation in the treatment of refractory and superrefractory status epilepticus

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Abstract

Background. Pharmacological treatment of Refractory status epilepticus (RSE) and Super-refractory status epilepticus (SRSE) remains a challenge, while transcranial magnetic stimulation (TMS) is one of non-pharmacological options considered to attempt.
Objective of the study. We present two intriguing cases of RSE and SRSE successfully managed by pharmacological approach and TMS.
Material and methods. All data were collected from medical database. Patients underwent all pharmacological stages of the treatment of RSE/ SRSE and TMS.
Results. A 73-year-old female suspected of ischemic stroke with aphasia and right hemiplegia and a 63-year-old female with generalized tonic-clonic seizures evolved to unconscious state, were admitted to ICU. In both cases lab tests, cerebrospinal fluid, brain computed tomographies as well as magnetic resonance imaging were unremarkable. In the first case video-electroencephalography (EEG) monitoring showed pathological patterns and protocoled pharmacological treatment failed. At the third stage, repetitive TMS was associated to continuous midazolam. In the second case, fluctuating lateralized rhythmic delta activity on EEG was not resolved despite phenytoin, phenobarbital, propofol and ketamine administration. Under TMS sessions, diffuse delta slowing and background reactivity were observed. Following days after withdrawal of anesthetic and TMS modulation, clinical status and patients' EEG improved.
Conclusions. Synergistic effects of pharmacological and TMS modulation probably suppressed seizure activity and helped us to acquire favorable outcomes in management of RSE and SRSE.
Key words: Refractory status epilepticus, super-refractory status epilepticus, transcranial magnetic stimulation.

Comorbidities and cognitive decline: relations and interactions in stroke patients

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Abstract

Background: Cognitive decline in stroke patients represents a common issue that can result in poor rehabilitation outcomes and require bigger resources from healthcare systems. Although cognitive conditions can be regarded as separate diagnosis, it is clear that presence of several comorbidities are more common in patients with cognitive disorders. The aim of our study was to determine the most common associations of comorbidities in patients with stroke and cognitive decline.
Material and methods: A retrospective analysis of patients with stroke admitted to rehabilitation unit was performed. Patients with cognitive decline were analyzed separately in order to highlight main comorbidity groups.
Results: Comorbidity number was identical in patients with or without cognitive decline, counting about 4 – 5 additional diagnosis. Cognitive disorders were registered in 11% of the patients. Among most common comorbidity groups were observed the cardiovascular conditions mainly hypertensive cardiopathy in 56 % and atrial fibrillation in 48 % followed by metabolic pathologies, such as diabetes in 24% and hyperlipidemia in 22% of the patients. Among the most common functional deficits in patients with cognitive decline were hemiparesis and speech disorders.
Conclusions: Cardiovascular and metabolic group of conditions are the most common groups of comorbidities in patients with stroke and cognitive decline. A more sensitive research including clustered/ group analyses should be performed in order to determine comorbidity interaction in patients with stroke and cognitive deficits.
Key words: stroke, cognitive decline, dementia.

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