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# Conventional and quantitative electroencephalogram (EEG) features in hospitalized patients assessed for catatonia

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Background: Catatonia involves psychomotor irregularities. EEG may help characterize the pathologic processes underlying catatonia. The most common EEG abnormality in catatonia is generalized slowing. To our knowledge, no quantitative EEG (qEEG) analyses have been performed in catatonic patients. We aimed to describe the conventional and quantitative EEG characteristics of hospitalized patients with and without catatonia. Methods: We identified patients who underwent EEG recording within 24 hours of a catatonia evaluation. We collected demographic data, psychiatric evaluations, and conventional EEG descriptions. Catatonia was diagnosed using DSM-5 criteria. We computed 27 qEEG features characterizing band power, spectral variability, coherence and complexity. We compared patients with and without catatonia using the Wilcoxon Rank Sum Test and the Fisher's Exact Test. Results: We identified 82 patients for inclusion. Median (IQR) age was 41 (6-91) years and 46% were male. One catatonic patient had seizures on EEG. We found an increased prevalence of generalized slowing in catatonia (46% versus 17%, p=0.0085). EEG theta variability was lower in catatonia (p=0.0056). Conclusion: Hospitalized patients with catatonia may be more likely to demonstrate signs of cerebral dysfunction on EEG than those without catatonia. Although conventional EEG findings are nonspecific, qEEG may give insights to the neurophysiology of catatonia.