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SUBGROUPS WITH CHARACTERISTICALLY DIFFERENT ELECTROENCEPHALOGRAPHIC PROFILES IDENTIFIED BY CLUSTER ANALYSIS WITHIN SCHIZOPHRENIC PATIENTS

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Aim: To examine clinical, electrophysiological differences among subgroups of schizophrenic patients with different QEEG profiles identified by cluster analysis.
Method: Fifty-two schizophrenic patients were studied (age:34.64±10.41, 18-58 years). Digital, resting electroencephalogram was recorded and submitted to quantitative-topographic spectrum analysis (QEEG), and patients´ clinical state was assessed by the Greek version of Positive and Negative Syndrome Scale (PANSS). QEEG data were submitted to cluster analysis, and QEEG, clinical differences were compared using Kruskal-Wallis non-parametric test.
Results: Three groups of patients with different electrophysiological profiles ($p< 0.05$) were detected by cluster analysis of QEEG data: Group A, characterized by increased levels of relative power in α frequency band, low levels in β, medium levels of relative power in δ, θ frequency bands; Group B, characterized by increased levels of relative power in δ, θ frequency bands and medium in α, β; Group C, characterized by increased levels of relative power in β frequency band, very low in α, medium in δ, θ bands. According to PANSS, group A patients had lower ($p< 0.05$) levels of agitation, hostility/aggression, difficulty in abstract thinking, stereotypic thought and attention deficit than patients of the other groups.
Conclusions: Cluster analysis can be used to identify characteristically different QEEG profiles of schizophrenic patients. The cluster with increased relative power in the α frequency band, low levels in β, and medium in δ, θ bands was “healthier” in specific PANSS parameters than the clusters with low α and increased relative power in δ, θ and β frequency bands.

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