

ADULTS WITH EPILEPSY: COGNITIVE IMPAIRMENT RELATIONSHIPS WITH CLINICAL ASPECTS AND QUANTITATIVE EEG

L. Fonseca, G. Tedrus, R. Ballarin, L. Negreiros, T. Marques
Medicine, Pontifícia Universidade Católica de Campinas, Brazil

lineu.fonseca@uol.com.br

Introduction – Cognitive impairment frequently occurs in patients with epilepsy (PWE), but its pathophysiological basis is not well known. This study assessed cognition and its correlations with the clinical aspects and EEG coherence of PWE.

Method – Eighty patients with epilepsy seen consecutively at PUC-Campinas and 40 normal subjects (CG) were assessed by neurological evaluation, Mini-mental Status Examination, immediate and delayed recall of 10 simple figures, phonemic verbal fluency (FAS), clock drawing, and EEG. The mean global inter- and intrahemispheric coherences for the delta, theta, alpha and beta bands were calculated. Cognitive functions and EEG coherence of PWE and the CG were compared, and logistic regression analysis determined the factors associated with impaired cognitive functions in PWE. The significance level was set at $p < 0.05$

Results – Cognitively, regression analysis showed that FAS impairment (14.5 ± 8.6 x 24.3 ± 15.7 , respectively) and delayed recall of figures in PWE (7.3 ± 2.07 x 8.6 ± 1.48) differed significantly between PWE and the CG (R^2 Nagelkerke=0.273). Beta interhemispheric coherence was higher in PWE than in the CG (0.446 ± 0.044 x 0.425 ± 0.036). Logistic regression analysis evidenced a significant association between beta inter-hemispheric coherence and schooling for FAS impairment (2 subgroups with cutoff at 12) (R^2 Nagelkerke=0.290), and between the presence of EEG epileptiform activity and delayed recall of figures impairment (cutoff at 8) (R^2 Nagelkerke=0.074). Other variables, such as epileptic seizure control and epileptic syndromes were not associated.

Conclusions – Our findings suggest the importance of studying epileptiform activity and quantitative EEG for assessing cognitive changes in PWE.