

EEG AND LONG LATENCY EVOKED POTENTIALS IN VEGETATIVE STATE PATIENTS

M. Beridze, G. Chakhava, **E. Devidze**, L. Shanidze
Neuromedicine, Tbilisi State Medical University, Georgia
postdoc2002@gmail.com

Aim: to investigate the predictive value of auditory long latency evoked potentials (ALLEP) in vegetative state (VS) patients.

Methods: Totally 23 VS patients investigated. Consciousness rated by Glasgow Coma Scale (GCS). Coma etiology and background EEG frequencies were researched. Coma recovered patients evaluated by Disability Rating Scale (DRS). EEG activity and ALLEP were detected by 16 channel EEG with regime for evoked potentials. Binaural auditory stimulation was applied. Statistics performed by SPSS-11.0.

Results: From 23 VS patients 9 patients evaluated as MCS according to international criteria. Among 14 patients with VS (GCS= 5-7) 5 patients revealed delta background EEG pattern and died within 1 month. 3 VS patients (GCS 5-8) showed the theta EEG pattern, among of which 1 patient developed PVS, 1 patients recovered (DRS=18) and 1 patient died. 2 patients (GCS=5) with beta EEG developed PVS and 4 patients (GCS= 4-7) with alpha EEG died within month. None of these patients showed the ALLEP. All 9 patients with MCS revealed ALLEP among of which 5 patients (GCS=5-8) showed high amplitude theta EEG and recovered (DRS=16-20). 1 patient with delta EEG (GCS=6) died. Among 3 patients with beta EEG (GCS=5-7) 2 developed PVS and 1 patient recovered (DRS=22). Correspondence analysis of all researched factors revealed that sound localization was significantly associated with EEG theta rhythm and outcome (Chi-scr.=31.1049; p0.000). The high amplitude fronto-temporal theta frequencies were correlated with ALLEP (p300) ($r=+0.47$; p0.01).

Conclusion: ALLEP in VS patients is associated with high amplitude theta EEG and is significant for favorable outcome.