

P01-386 - **ALPHA RHYTHM FREQUENCY IN DIAGNOSTIC OF ALZHEIMER DISEASE**

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**Objectives:** Digital EEG pattern specific for Alzheimer disease has not studied yet.

**Methods:** Resting EEG (16 channels) was recorded by the use of "Brainscan" system in 150 persons: 50 healthy 20-55 year old volunteers, 50 healthy 55-75 year old volunteers, 50 patients with mild Alzheimer. Alpha rhythm frequency was checked after Furie's reversal transformation in periodmetric analysis for single "pure" alpha rhythm (8-13.5 Hz).

**Results:** Significant distinction between a healthy subjects and Alzheimer patients has proved to be changed spatial - frequency alpha rhythm structure. High-frequency alpha rhythm is dominant in the occipital zone and low - in the frontal one of healthy subjects. Alzheimer patients show the opposite relationship. This phenomenon named the "inversion" can be revealed only by mean of digital EEG, visually - no, because the difference between frontal and occipital mean frequency may be less than 0.01 Hz.

The inversion discovered in 90% of Alzheimer patients, while among healthy persons of 20-55 years - in 2%, among healthy persons elder 55 - 7%.

CT investigation has not revealed any occipital or frontal lobe pathology. Therefore alpha inversion is stipulated by violations of thalamic rhythm generator's function. Inversion mean EEG quality decline and determined by disharmony between thalamic and anterior alpha generators.

**Conclusion:** For Alzheimer disease inversion may be considered as diagnostic sign revealing organic brain damage. Future studies should evaluate it's clinical usefulness in early differential diagnosis, disease staging and therapy monitoring.