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ARE PLATELET SEROTONIN LEVELS AND PLATELET MAO ACTIVITY THE BIOLOGICAL MARKERS FOR THE PROGRESS OF ALZHEIMER'S DISEASE?

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Introduction: Alzheimer's disease (AD) is a complex and progressive neurodegenerative disorder with unclear aetiology. Cognitive impairment and the behavioral disturbances in patients with AD might be associated with altered serotonergic system.

Objectives: Platelet serotonin (5-HT) levels and platelet monoamine oxidase type B (MAO-B) activity might be the biological markers for the progress of AD.

Aims: To determine platelet 5-HT concentrations and MAO-B activity in female patients with mild, moderate or severe stage of AD and sex and age matched healthy controls.

Methods: The study included 106 female patients with the diagnosis of probable AD (DSM-IV-TR and NINCDS-ADRDA criteria), subdivided according to the Mini Mental State Examination (MMSE) score in early (MMSE 26-18), middle (MMSE 17-10) and late (MMSE 9-0) phase of AD. Control group consisted of 102 healthy elderly women (MMSE 30-27).

Platelet 5-HT concentrations and MAO-B activity were determined using spectrofluorimetric methods.

Results: Platelet 5-HT concentrations and MAO-B activity were similar between all patients with AD and healthy controls. Patients in the late phase of AD had significantly ( $p < 0.05$ ) lower platelet 5-HT concentrations and MAO-B activity than patients in other phases of AD and healthy controls.

The significant correlations were found between MMSE scores and platelet 5-HT concentrations, MAO-B activity and age.

Conclusion: The results suggest that platelet 5-HT concentration and MAO-B activity might be the peripheral biological markers for the severity and/or clinical progress of AD.