

OXIDATIVE STRESS MARKERS AND SACCADIC PARAMETERS IN PATIENTS WITH SCHIZOPHRENIA

A. Mechri¹, M. Raffa², C. Fendri¹, H. Dridi³, A. Gassab³, A. Kerkeni²

¹Department of Psychiatry, University Hospital of Monastir, ²Department of Biophysical, Faculty of Medicine, University of Monastir, ³Department of ENT, University Hospital of Monastir, Monastir, Tunisia

Introduction: Impairments in oculomotor performances such as saccade tasks were reported in patients with schizophrenia. Correlation between oxidative stress markers and ocular saccades has not been studied.

Objective: To explore the relationship between markers of oxidative stress (antioxidant enzyme activities and glutathione levels) and saccadic parameters (frequency and latency) in a sample of patients with schizophrenia.

Methods: Thirty clinically stable patients with schizophrenia (24 men and 6 women, mean age = 29.9 ± 6.3 years) and 25 control subjects matched for age (13 men and 12 women, mean age = 29.3 ± 4.9 years) were recruited. Frequency and latency of saccadic tasks (anticipatory and compensatory saccades) were recorded with an oculometry. The erythrocyte activities of antioxidant enzymes: Superoxide Dismutase (SOD), Glutathione Peroxidase (GSH-Px) and Catalase (CAT) were measured. Glutathione (GSH) levels were determined in blood samples.

Results: Patients had significantly lower activities of all antioxidant enzymes and levels of total and reduced GSH compared with controls. High saccades frequency was found in patients compared to controls. The saccade latencies were higher in patients compared to controls. In the patients, a negative correlation was found between total and reduced GSH and frequency of compensatory back-up saccades. Square-wave-jerks were negatively correlated with oxidized GSH level and SOD activity.

Conclusions: The decrease of antioxidant defenses (SOD activity and GSH levels) was associated with the saccadic frequency in patients with schizophrenia, suggesting the involvement of oxidative stress in the pathophysiology of oculomotor abnormalities in schizophrenia.