

STUDY OF PARAOXONASE 1 ACTIVITY IN TUNISIAN BIPOLAR I PATIENTS TREATED WITH THYMOREGULATORS

A. Ezzaher¹, D. Haj Mouhamed¹, I. Hellara¹, F. Neffati¹, A. Mechri², W. Douki¹, L. Gaha², M.F. Najjar¹

¹Laboratory of Biochemistry-Toxicology, Monastir University Hospital, ²Department of Psychiatry, Research Laboratory 'Vulnerability to Psychotic Disorders LR 05 ES 10', Monastir University Hospital, Monastir, Tunisia

Introduction: Paraoxonase (PON), an enzyme, is a key process in the pathophysiology of atherosclerosis.

Aims: We aim to investigate the variations of PON1 activity in Tunisian bipolar I patients treated with thymoregulators.

Patients and methods: Our study included 78 patients with bipolar I disorder, diagnosed according to the DSM-IV, and 64 controls aged 35.97±11.55 years and 36.31±18.26 years respectively. 41 patients were treated by valproic acid, 16 under carbamazepine and 21 under lithium. PON1 activity was determined by kinetic methods using Konelab 30 equipment.

Results: Compared to controls, patients treated by thymoregulators had a significantly lower paraoxonase activity ($p=0.004$). Furthermore, PON1 was significantly correlated with c-HDL values ($r=0.5612$; $P<0.001$). The lowest PON1 levels were noted in patients treated with lithium (150 ± 94 UI/L) and the highest levels were showed in those under carbamazepine (260 ± 185 UI/L), but this difference was not significant. In patients under lithium, we showed that this parameter was significantly lower when illness duration was more than 12 years, the lithium posology exceeds 1000 mg/day and the lithium plasmatic concentrations were more than 0.54 mmol/L. However, there was no significant difference among gender, age, cigarette smoking and alcoholic beverage.

Conclusions: Bipolar patients had a significant decrease in PON1 activity that contributes to increased risk of cardiovascular diseases. This perturbation could be related to treatment with thymoregulators and particularly lithium. Therefore, such patients should require specific care and clinics should track the effects of treatment on physical and biological parameters, and should facilitate access to appropriate medical care.