

Summary

TITLE: The impact of metabolic parameters on cognitive functions in bipolar patients treated with mood stabilizers.

OBJECTIVE: Cognitive impairment in euthymic phase of bipolar disorder has been documented in many studies. There are several contributing factors exerting detrimental effect to such an impairment, e.g. sedative medication, thyreopathy. Cardiometabolic risk factors constitute another frequent condition found in bipolar disorder and exerting probably adverse impact on cognition. Since this condition is treatable and current literature suggests possible connection with cognitive dysfunction, this study aimed to explore such associations to identify promising targets of complex treatment.

METHODS: Forty euthymic bipolar patients were enrolled into a prospective one-year study. Patients underwent the examination in the beginning of the study and one year after. Their body and metabolic parameters were measured. Medical history data were collected. Cognition was evaluated using battery of tests. Neuropsychological performance was transformed into neurocognitive composite score. Cognition of subjects was compared dichotomously according to presence or absence of pathological body and metabolic parameters. Correlations of selected parameters and composite score were done.

RESULTS: Low neurocognitive score was found in presence of hypertension, metabolic syndrome, abdominal obesity and hyperglycemia. Only connection of hypertension and cognitive score reached sufficient statistical power. Patients presenting hypertension performed worse in all tested domains of cognition when compared with normal blood pressure group. Subjects using lithium performed substantially worse in cognitive tests. However, in comparison with anticonvulsant group, lithium users had markedly longer disorder history as well as longer duration of thymoprophylaxis. No significant correlation of HDRS score, insulinemia or HOMA-IR was found. After one year, significant improvement in cognitive performance and in atherogenic index occurred. The detection of cognitive improvement in the same time as favorable atherogenic index change suggests the possibility of enhancing cognition by the treatment of cardiometabolic risk factors.

CONCLUSION: Despite relatively small sample size, noticeable association of hypertension and cognitive impairment was revealed. This might indicate possible way of enhancing cognition in bipolar disorder by treating elevated blood pressure. Repeated evaluation of cognitive abilities revealed significant improvement and thus, progressive nature of cognitive impairment in bipolar disorder was not detected.