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Purine Metabolism in Patients with Major Depression: a Follow-up Study.

T. Ali-Sisto¹, T. Tolmunen¹, V. Velagapudi², P. Mäntyselkä³, S.M. Lehto¹

¹Department of Psychiatry, University of Eastern Finland, Kuopio, Finland ; ²Metabolomics Unit, Finnish Institute of Molecular Medicine, Helsinki, Finland ; ³Unit of Primary Health Care, University of Eastern Finland, Kuopio, Finland

Introduction: Purine metabolism may be affected in major depressive disorder (MDD). Increased enzymatic activity of the purine cycle has been observed in MDD. In MDD patients, purine metabolite levels also react to sertraline treatment.

Objectives: To compare serum purine metabolites between: 1) MDD patients and non-depressed controls; and 2) remitted and non-remitted MDD patients.

Aims: To clarify the role of purine metabolism in MDD during active illness and recovery.

Methods: The sample comprised 99 MDD patients (DSM-IV, SCID interview) and 318 non-depressed controls (Beck Depression Inventory scores < 10) aged 20–71 years. Altogether, 78 patients returned for the follow-up; 33 were remitted and 45 non-remitted. Nine purine cycle metabolites were analysed using ultra performance liquid chromatography. Serum metabolite differences between the study groups were examined using logistic regression adjusted for age, gender, smoking, alcohol use, physical exercise and B-HbA1c. The follow-up analyses were adjusted for age, gender and physical exercise.

Results: The participants' likelihood of belonging to the MDD group increased 1.1-fold for each 1-unit decrease in serum inosine, 3.2-fold for each 1-unit decrease in guanosine levels and 2.2-fold for each 1-unit increase in xanthine levels. The remitted and non-remitted groups displayed no significant metabolite differences, but the remitted group showed a non-significant shift of values towards the values of the non-depressed group.

Conclusions: Increased degradation of purines and accumulation of xanthine may characterise MDD. Alterations in purine metabolism appear to only partially change during recovery. Nevertheless, recovery-related changes require further investigation in larger samples.