

## **P-1225 - THE OXIDATIVE STRESS MAY BE INDUCED BY THE ELEVATED HOMOCYSTEINE IN SCHIZOPHRENIC PATIENTS**

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The elevated level of homocysteine (Hcys) has been observed in patients with schizophrenia. It is proposed that Hcys may act as an oxidant in the model system *in vitro* and *in vivo*, the aim of our study was to explain the effect of the elevated Hcys on the selected parameters of oxidative stress, namely thiobarbituric acid reactive substances (TBARS), an index of lipid peroxidation in plasma, the level of carbonyl groups in plasma proteins, as well as the amount of 3-nitrotyrosine in plasma proteins isolated from schizophrenic patients (acc. to DSM-IV criteria). Patients were treated with atypical antipsychotics and interviewed with questionnaire (treatment, diet, addictive substances, metabolic syndrome). High-performance liquid chromatography (HPLC) was used to analyse the total level of homocysteine in plasma. Levels of carbonyl groups and 3-nitrotyrosine residues in plasma proteins were measured by ELISA and a competition ELISA, respectively. The lipid peroxidation in plasma was measured by levels of TBARS. Our results showed that in schizophrenic patients the amount of homocysteine in plasma was higher in comparison with the control ( $p < 0.00001$ ). We also observed a statistically increased level of biomarkers of oxidative/nitrative stress such as carbonyl groups or 3-nitrotyrosine in plasma proteins from schizophrenic patients. Moreover, our experiments indicate that the correlation between the increased amount of homocysteine and the oxidative stress exists: for carbonyl group and 3-nitrotyrosine  $R = 0.83$ ,  $R = 0.84$  respectively). Considering the data of our study, we suggest that the elevated Hcys in schizophrenic patients may stimulate the oxidative stress.