**Metabolic syndrome of patients with schizophrenia and spectrum of apolipoproteins in blood serum**

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Schizophrenia is associated with lower life expectancy due to cardiovascular disease. This is particularly related to increased vulnerability to develop metabolic syndrome (MetS), for example after antipsychotic treatment. Apolipoproteins (Apos) play critical role in synapse and myelin maintenance and may thus be both appealing candidates in the pathogenesis of schizophrenia and biomarkers of antipsychotic-induce metabolic side effects.

The **aim** of the study is to measure apolipoproteins in the serum of patients with schizophrenia with MetS and without it.

**Methods.** After obtaining informed consent,53 patients with schizophrenia (ICD-10: F20) were included. All patients received antipsychotic treatment. Patients were divided into two groups: 26 with MetS and 27 without it (according to criteria the International Diabetes Federation (2005). Control group consisted of 25 healthy persons.

Concentrations of apolipoproteins (ApoA1, ApoA2, ApoC2, ApoC3, ApoE) were measured on a multiplex analyzer MAGPIX (Luminex, USA) with use of xMAP® Technology. Panel APOMAG-62K by MILLIPLEX® MAP (Merck, Darmstadt, Germany) was used to determine the levels of Apos in blood serum. Statistical analyses were performed using the SPSS software. Differences were considered significant at *p*≤0.05.

**Results**. A significantly lower level of ApoA1 was found in patients with (*p*=0.013) and without MetS (*p*=0.002) compared with healthy individuals. Analysis of the levels of other Apos revealed a significant increase of ApoC3 in patients with MetS in comparison to controls (*p*=0.001) and patients without MetS (*p*<0.001). A similar situation was observed with respect to ApoC2: patients with MetS had significantly higher level than healthy persons (*p*=0.002) and patients without MetS (*p*<0.001). It is worth noting that a trend to increase of ApoE in patients with MetS was found compared with patients without it (*p*=0.075). Blood sampling was repeated in patients after 4 weeks of pharmacotherapy. No significant differences were established in relationship to antipsychotic treatment (between first and second points). Concentrations of АpoС3, АpoА2, АpoС2 in patients with MetS at the second point were higher compared with patients without MetS, as well as for the first point of research, and the differences became more significant (*p*1<0.001, *p*2=0.004, *p*3<0.001). A significant increase in the level of ApoE was found in patients with MetS (*p*=0.001), while at the first point of the study differences were at the level of statistical trends.

**Conclusions.** According to the literature data and results of the study, disturbances in level of ApoA1 are suggested to play role in pathogenesis of schizophrenia while level of ApoA2, ApoC2, ApoC3 and ApoE may provide metabolic imbalance.

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