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BIOCHEMICAL AND BIOPHYSICAL ASPECTS OF THE PATHOPHYSIOLOGY OF FIRST EPISODE OF SCHIZOPHRENIA

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Introduction: The knowledge of pathophysiology of first psychotic episode is still fragmentary.

Aim: To investigate some biochemical and biophysical parameters in first-episode, drug-naive schizophrenic (FES) patients.

Methods: 26 FES patients (ICD-10; F 20.0 and F 20.3) and 15 age- and gender-match volunteers were investigated. Clinical severity of FES patients were assessed by PANSS scale. Platelet monoamine oxidase (MAO) and serum semicarbazide-sensitive amine oxidase (SSAO) activities, middle-mass endotoxin molecules (MMEM) and malondialdehyde (MDA) levels were measured using respective methods. Steady-state and subnanosecond fluorescent spectroscopy were used for the investigation of albumin conformational changes.

Results: Severity of disorder prior the treatment was 75.5 ± 2.2 (PANSS score). FES patients were characterized by significant increase in MAO activity (99 %) and MMEM concentration (124 %) and significant decrease in SSAO activity (26 %) as compared with controls. Changes of albumin conformational and functional parameters ("effective" albumin concentration and "reserve" of albumin binding) estimated by steady-state fluorescent spectroscopy were insignificant. Factor analysis revealed that MAO and SSAO are more tightly connected with pathogenetic mechanisms of FES than MMEM, MDA and albumin functional parameters. Significant conformational changes of albumin of FES patients were detected using pulse fluorescent spectroscopy with subnanosecond resolution. Results are compared with the data received in chronic schizophrenic patients.

Conclusion: From pathophysiological point of view FES is the initial step in development of pathologically disturbed biochemical status characteristic to chronic schizophrenia.

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