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NEUROCOGNITIVE IMPACT OF UMBILICAL BLOOD STEM CELLS ON SCHIZOPHRENIC PATIENTS

A.B. Smulevich¹, E.B. Dubnitskaja², L.K. Pavlova², Y.V. Morosova²

¹Department of Borderline Metal Pathology and Psychosomatic Disorders, ²Mental Health Research Center of RAMS, Moscow, Russia

Objective: to assess the safety and effectiveness of umbilical blood stem cells (UBSC) regarding neurocognition and social cognition in schizophrenic patients.

Samples and methods: 10 men (33,6±10,6 years old) with episodic type of paranoid schizophrenia in remission with dominating negative symptomatic (F20.04 in ICD-10), who gave the informed consent and received concentrate of 250 millions UBSC intravenously. The control sample (10 patients) meeting the key demographic and disorder criteria received placebo. All patients continued antipsychotic therapy in fixed doses. In the first phase, both samples previously examined against PANSS and MCCB received one injection of UBSC or placebo. In the second phase, ten patients received four injections of UBSC each, one injection every two weeks. The dynamic was rated before each injection and at the 3rd, 5th, 7th, and 12th week after the last injection.

Results: The data of the first phase points to a safety of UBSC injections (no serious or severe adverse events registered). The second phase proves the effectiveness of UBSC: the PANSS score drops from 24.5±2.4 to 19.2±2.7 ($p < 0,001$) on the negative psychopathology scale, and 41.2±6.8 to 30.82±4.4 on the general psychopathology scale. The neurocognition improved ($p < 0,001$) in speed of processing (30.6±1.6 to 49.4±1.7), attention (30.6±2.4 to 48.5±3.1), memory (39.7±1.4 to 56.1±1.4), verbal learning (41.3±1.7 to 62±3.2), visual learning (38.6±3.4 to 62.9±2.5), executive functions (35±2.2 to 59.5±2.5). However, the increase in social cognition was statistically nonsignificant (43.6±1.6 to 46.1±2.1).

Conclusion: the cognitive impact of UBSC appears to be made via its obvious metabolic (nootropic) and psychostimulant actions.