

## Correlation of thrombodynamics parameters with severity of catatonia in children with childhood autism

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Autism spectrum disorders (ASD) are classified as mental development disorders. Severe forms of ASD are accompanied by the appearance of catatonia with developmental arrest, regression of higher mental functions. It was found that the onset of catatonia in ASD is associated with the propagation of neuroinflammation. In our previous work [1], it was shown that patients with ASD have increased blood coagulation (hypercoagulation) with spontaneous clots, which indicates the presence of neuroinflammation.

### Objective

To study a correlation between the values of thrombodynamics parameters by the thrombodynamic test and the severity of catatonia in children with ASD.

### Material and methods

24 patients (22 boys and 2 girls) with infantile psychosis in childhood autism (F84.02) aged from 3 to 13 years, were studied. The severity of catatonia was determined by BFCRS. The catatonia less than 25 scores was defined as mild; 25-35 scores — medium; and more than 35 scores — heavy. In the research group, mild / medium form of catatonia was diagnosed in 20 patients (83%) and heavy form of catatonia was observed in 4 patients (17%).

The thrombodynamics test was performed on the platelet-free plasma of patients using the T-2 Thrombodynamics device (ООО Gemakor, Moscow, Russia).

### Results

It was shown that TD parameters, such as: clot growth rates from the activator (V, Vi, and Vst) are statistically significantly higher than their normal values. Similar results were obtained for the CS parameter (clot size at the 30th minute). The values of Tlag (clot growth delay) and D (clot density) are within the normal range. The values of the Tsp parameter (the time of appearance spontaneous clots) are less than the lower limit values of the normal range (30 min). Correlation analysis showed that only indicators Vi (initial growth rate of the clot) and Tsp statistically significantly correlate with the severity of catatonia. At the same time, the Vi parameter correlates positively with the severity of catatonia, while the Tsp indicator correlates negatively. With an increase in the time of spontaneous clots (a decrease in the procoagulant activity of platelet microparticles in the blood plasma of patients), the severity of catatonia in children with ASD decreases.

### Conclusion

For the first time, it was shown that neuroinflammation and related systemic inflammation in children with catatonia affects the hemostatic system. It is reflected in the appearance of rapid spontaneous clots in patients (Tsp < 30 min). The obtain data suggests that normalization of plasma and platelet hemostasis may be important for improving the effectiveness of treatment of patients with ASD and catatonia.

### Источники и литература

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