

## **Abstract**

The central nervous system with its controlling and life-essential functions has a privileged position in our body. It has its own immune surveillance and is one of the immunoprivileged organs, in which immune reactions take place in specific ways. However, it is known that it is not entirely spared from immunopathological processes. Autoimmune diseases of the central nervous system are rare. Despite the growing diagnostic methods, the determination of an autoimmune aetiology of neurological disorders remains difficult. Thus, new diagnostic possibilities are constantly searched.

The aim of this study was to investigate the levels of cytokines and chemokines in cerebrospinal fluid and serum in pediatric patients with various autoimmune diseases of the central nervous system as possible markers of inflammation.

The contribution of our work is the potential in the use of cytokines and chemokines for the diagnosis of autoimmune diseases of the central nervous system when conventional diagnostic methods fail, as well as for the possible monitoring of the disease courses and the therapy effects. Our data may also contribute to the elucidation of the pathophysiology of individual diagnoses and to more effective and targeted therapy of these diseases in the future.

**Keywords:** autoimmune diseases of the central nervous system, children, cytokines, chemokines, markers of inflammation, diagnostic methods