

## CHARACTERISTICS OF IMMUNE RESPONSE DURING HERPES SIMPLEX VIRUS INFECTION IN CHILDHOOD

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The infection with the herpes simplex virus (HSV) basically implies the chronic activation of the immune system. Interferon gamma (IFN- $\gamma$ ) and Interleukin 4 (IL-4) are part of the mechanisms that control the immune system's response to recurrent herpes simplex virus.

The research included 40 children (2–15 years old) with clinical herpes simplex virus infection. Routine laboratory tests were performed on the patients: leukocyte count, creatinine-kinase-CPK, oxidative stress (nitro-blue tetrazolium), NBT test, lactate-LDH dehydrogenation, IFN- $\gamma$ , IL-4 levels in serum were measured by ELISA test. The serological test for HSV type I virus was positive in all patients.

A high level of LDH, CPK was detected as well as a low ability to reduce NBT. An increased level of IFN- $\gamma$ , IL-4 was observed compared to the control group of patients (who did not have clinical manifestations of herpes virus infection). Patients with a high concentration of IFN- $\gamma$  are associated with a low concentration of NBT-test.

During infection of virus herpes simplex, an immune response is activated (lymphocyte Th1 and Th2 type are stimulated). Different clinical manifestations are based on a certain type of immune response. Our results presented the dominance of the Th1 type of response over the Th2 type. The production of IFN gamma was higher compared to IL4. Oxidative stress parameters were also associated with the dominant Th1 type of immune response. This is all important for prognosis, prevention and therapy.

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