

## **Herpes simplex encephalitis – diagnostic imaging**

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### **ABSTRACT**

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The phenomena of neuroinvasiveness, latency and reactivation are characteristics of the Herpes simplex virus (HSV). The Herpes simplex encephalitis (HSE) prevalence rate is 1 up to 3 in a million cases, which is about 10-20% of all viral encephalitis cases. The course of the disease shows the prodromal period and the symptomatic one; the clinical course is usually rapid and may lead to sudden death. As for the symptomatic period, there are usually neurological focal symptoms and seizures as well as fluctuating consciousness leading to coma. The mortality rate in the course of HSE in non-treated individuals reaches up to 70%, it is lowered to 15% with early treatment with Acyclovir. However, most patients present persistent neurological and cognitive disorders.

There are usually no changes in the CT scan as far as the early stage of the disease is concerned. Thus, the imaging technique of choice is MR scan, which shows the changes already on the

second day after clinical symptoms. On the basis of MR scans, more or less symmetrical hyperintense cortical and subcortical white matter lesions occur on T2-weighted images with gyral and/or leptomeningeal contrast enhancement. MR spectroscopy can be helpful in lesion diagnosis and monitoring, while diffusion-weighted imaging (DWI) can be used to evaluate inflammatory process activity. Differentiation of HSE in imaging should consider limbic encephalitis, gliomatosis cerebri, cerebral ischemia, cerebral edema after seizure episodes, and MELAS syndrome (Mitochondrial Encephalomyopathy, Lactic Acidosis, and Stroke-like episodes), among others. HSV identification in cerebrospinal fluid by PCR (polymerase chain reaction) method is a confirmation of the diagnosis.

**Keywords:** Herpes simplex encephalitis, limbic encephalitis, computed tomography, magnetic resonance imaging, MR spectroscopy

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