Significance of neural antibodies in patients with drug refractory epilepsy

Abstract

One possible etiology of epilepsy is autoimmune, which was included in the classification of epilepsies in its latest revision published in 2017 by the International League Against Epilepsy. The aim of this study was to evaluate the prevalence of neural autoantibodies in patients with epilepsy and to expand the diagnostic possibilities in the Czech Republic. Together with the Dutch authors, we described the prevalence of neural autoantibodies in Dutch and Czech patients with focal epilepsy of unknown etiology and proposed a scoring system to identify patients prioritized for testing for these antibodies. In a Czech cohort of patients, we assessed the presence of antibodies in serum and CSF of patients with drug refractory epilepsy. The results of both these studies showed a lower prevalence of neural autoantibodies than previously described in patients with epilepsy, due to a more rigorous methodology with verification of positive results by a second method. Since neural autoantibodies are primarily associated with autoimmune encephalitis, we also investigated this group, including an assessment of the presence of epileptic seizures in the clinical profile. Together with the Swedish authors, we investigated the proteomics in the CSF compartment of patients with antibodies against NMDAR and LGI1 and described the association of sirtuin 2 with the paraneoplastic etiology of NMDAR encephalitis. The methodology of neural autoantibodies assessment on tissue sections of rat brains using indirect immunohistochemistry was newly implemented in the Czech Republic. We have described a cohort of patients with a clinical picture of autoimmune encephalitis when neural autoantibodies were negative.

Keywords: autoimmune encephalitis, drug resistant epilepsy, GAD65, LGI1, neural autoantibodies, NMDAR