Abstract

The aim of this thesis is the role of neuronal antibodies in epileptogenesis. In the first phase of research we focused on 1) characteristics of epileptic seizures in patients with autoimmune encephalitis, 2) implementation of tissue brain assay as novel antibodies detection method in the Czech Republic, 3) profile of chemo- and cytokines in different autoimmune encephalitis stages, 4) genetic risk factors of autoimmune encephalitis development.

After mastering the detection methods, we found neural antibodies in 5 % of temporal lobe epilepsy patients. Immunotherapy response in some cases and lack of antibodies positivity in subgroup of temporal lobe epilepsy patients of known aetiology suggests their pathogenic role. Because seropositive and seronegative patients are difficult to distinguish by clinical characteristics in temporal lobe epilepsy patients (statistical significant differences were only in two of 14 characteristics), neural antibodies could be potential biomarker of autoimmune epilepsy. However, the investigation as a screening tool in all temporal epilepsy patient are too high, we focused on determination of clinical risk factors leading to identify the indication of antineural antibodies investigation. In the cohort of patients with focal epilepsy of unknown aetiology antineural antibodies seropositivity was detected in 3.4 % and we were able to identify clinical risk factors of autoimmune epilepsy. The spectrum of antineural antibodies was similar – anti-GAD, anti-LGI 1 and anti-CASPR2.

The identification of patients with positivity of neural antibodies could clarify epilepsy aetiology, even more can lead to change of therapy in these usually drug resistant epilepsy patients.

Keywords: neural antibodies, autoimmune epilepsy, temporal lobe epilepsy, autoimmune encephalitis