

**Natureza do trabalho:** Resumo

**TÍTULO**

*ASSOCIATION BETWEEN AUTOIMMUNE ENCEPHALITIS AND EPILEPTIC CRISIS FROM THE PERSPECTIVE OF ANTIBODY HEADED TO SURFACE NEUROMEMBRANE*

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**RESUMO**

**Introduction:** The autoimmune encephalitis or limbic encephalitis (LE) is an inflammatory disease of the hippocampus, amygdala, frontobasal and insular regions of the brain parenchyma<sup>1</sup>. It is a rare condition with an etiology first associated with paraneoplastic phenomena but recently associated with antibodies that act on the neuromembrane-surface. Clinical manifestations can precede in 6 years the neoplastic diagnosis allowing faster diagnosis, better prognosis and treatment<sup>1</sup>. The LE could be classified in two categories<sup>2</sup>: a) paraneoplastic LE: related to antibodies directed against intracellular antigens (GAD65, ANNA-1), associated with cytotoxic T Cell; b) non-paraneoplastic LE (NPLE): related to antibodies directed to cell membrane antigens (VGKC, NMDAR, GABA, AMPA), with better clinical and neuroimaging response to immunotherapy than patients with paraneoplastic LE, except when the antibodies are directed against intra neuronal antigens, as is the anti-GAD antibodies. Initial manifestations are depression or anxiety symptoms, characterized for apathy followed by subacute involvement of the short term memory, psychotic symptoms, psychomotor agitation and epileptic crisis. There was an increase of studies relating neuroantigens found in autoimmune encephalitis to epileptic episodes. **Objective:** Investigate the association between epilepsy nonrespondent to conventional treatment and autoimmune encephalitis, discussing the particularities of different antibodies directed to the neuromembrane and their clinical implications. **Material and Methods:** Review study using articles classified as case reports and original researches published in English on Pubmed and Scielo databases between January 2012 and July 2015. **Discussion:** 1. Antibody mediated limbic encephalitis is an increasingly recognized cause of seizures in cryptogenic epilepsy<sup>2</sup>; 2. Anti-Hu antibodies are those most frequently described with seizures, epilepsy partialis continua, and status epilepticus<sup>2,3,4</sup>; 3. Anti-GAD antibodies and LE is a rare condition and few cases have been reported in the literature. It has been proposed that anti-GAD antibodies could impair GABAergic synaptic transmission by reducing GABA synthesis and interfering with exocytosis of GABA, leading to increase excitability and lower seizure threshold<sup>3,4,9</sup>; 4. Anti-NMDAR encephalitis was first described in patients with paraneoplastic encephalitis resulting from ovarian teratomas. Some years later it was shown that the antibodies reacted with the NR1 subunit of the NMDAR. Other publications also showed that NMDAR encephalitis also could be found in the absence of a tumor. Clinically, patients present with seizures, memory loss, and psychiatric symptoms, such as fear, insomnia, anxiety, mania, and paranoia<sup>1,5,4,7</sup>; 5. The VGKC antibodies were later recognized as a common cause of LE and seizures. More recently, it was discovered that the actual antigen target of these antibodies are proteins associated with the VGKC complex, specifically leucine-rich gliomatin-associated 1 protein (Lgi1) and contactin-associated protein 2 (CASPR2)<sup>4,5,8,10</sup>. **Conclusion:** Cryptogenic epilepsy can be caused by autoimmune mechanisms as in the case of LE. Common antibodies present in both pathologies were identified and served as justification to the clinical manifestations of the disease. The treatment consists in

immunotherapy, which justifies the fact that this form of epilepsy does not respond to conventional treatment. Due to the different response to treatment health care professionals must consider the autoimmune cause in refractory epilepsy cases or new installed epileptic disorder.

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