Cytokines, epilepsy and antiepileptic drugs – is there a mutual influence?

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Abstract:
In recent years, the functional disturbances of the immune system, both humoral and cell-mediated immunity, have been detected more often among persons with epilepsy than in general population. A number of irregularities in cytokine production have been found in epileptic patients. It shows that epileptic seizures stimulate, per se, synthesis of pro-inflammatory and pro-convulsive cytokines. Some antiepileptic drugs (AEDs) influence the production of cytokines, too. The influence of AEDs on cytokine concentrations in blood has been observed, e.g. during carbamazepine (CBZ) or valproic acid (VPA) therapy. This article is a review of the literature which focuses on the connections between epilepsy and the cytokine system as well as on the influence of AEDs on the cell-mediated and humoral response in epileptic patients. Correlation of immunological irregularities in patients with the type, dosage, and serum level of AEDs will allow for early detection of undesirable treatment consequences in epilepsy. Elucidation of connections between cytokine system, epileptogenesis and effectiveness of AED therapy requires a better planned research on larger groups of patients with epilepsy.

Key words:
épilepsy, cytokines, antiepileptic drugs, interleukins