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Apoptotic markers are increased in Epilepsy patients: A relation with manganese superoxide dismutase Ala16Val polymorphism and seizure type through il-1 β and il-6 pathways

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The MnSOD Ala16Val single nucleotide polymorphism (SNP) has been associated with different diseases. However, there are scarcely studies relating this SNP in epilepsy, a neurologic disease that involves some interacting pathways, such as apoptotic and inflammatory factors. In this sense, we decided to investigate the relationship of MnSOD Ala16Val SNP with apoptotic markers in epilepsy and its relation with inflammatory pathway and seizure type. Ninety subjects were evaluated (47 epilepsies; 43 controls) by questionnaires and laboratorial exams. We observed a higher percentage of VV genotype in the epilepsy group when compared to the control group. IL-1β, IL-6, caspase-1, and caspase-3 levels were increased in the epilepsy group (VV genotype). Furthermore, an important correlation between IL-1β vs. caspase-1 and IL-6 vs. caspase-3 was observed in the epilepsy group (VV genotype). The epilepsy group which presented generalized seizures also demonstrated a positive correlation between IL-1β vs. CASP1 and IL-6 vs. CASP3. Thus, it is a plausible propose that epilepsy patients with VV genotype and generalized seizures present a worse inflammatory and apoptotic status. Our findings suggest that the knowledge of MnSOD Ala16Val polymorphism existence is important to evaluate molecular mechanisms associated to seizure and improve the treatment of these patients.

Biography

Aline Kegler has completed her PhD in 2019 at Federal University of Santa Maria-Brazil. Her focus research is on neurology and its related subjects. She has published more than 10 papers in reputed journals, presented an international research at European Congress of Neurology-Berlim, 2015, and received the certificate of the best presentation in some congresses.