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Poster Presentation

The Role of miR-146a in Inflammatory Process of Mesial Temporal Lobe Epilepsy (MTLE): Implication for Therapy

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Abstract

Epilepsy is the third most common chronic brain disorder which is characterized by an enduring predisposition to generate seizures. Mesial Temporal Lobe Epilepsy (MTLE) is the most common type of refractory epilepsy. Increasing evidence indicates that neuroinflammation plays a critical role in the pathogenesis of MTLE. Hundreds of micro-RNAs have been found to be abnormally expressed in epileptic tissues, whereas only several mi-RNAs, such as miR-146α have been reported to function in the pathological process of epilepsy. The miR-146a has been recently identified as a potentially endogenous regulator of TLR (Toll like Receptor) and cytokine receptor signaling, suggesting a link between mi-RNAs and inflammatory process in diseases like epilepsy. Up-regulation of both IL-1 and miR-146a expression levels associated with seizures in animal models and human MTLE, supporting the hypothesis that IL-1 and miR-146a are mediators of inflammation, which facilitate the epileptic process. Despite the recent advent of additional antiepileptic drugs (AEDs) and respective surgery, the treatment of epilepsy remains a major challenge. Understanding the role of miR-146a MTLE–associated pathologies may be relevant for the development of new therapeutic strategies. Therefore the aim of this paper is to introduce miR-146a as a recommended therapy for epilepsy in future studies. MiR-146a and specific inflammation related pathways, are as a probable therapy for some MTLE patients who are resistant to available AEDs.

Keywords: Neuroinflammation, Mesial temporal lobe epilepsy, miR-146α

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