Hippocampal RNA expression gene sets and biological pathways with prognostic value for seizure outcome following anterior temporal lobectomy with amygdalohippocampectomy

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Abstract

Introduction: Approximately 1% of the U. S. population suffers from epilepsy. Among these patients, 30% are defined as medically intractable and thus potential candidates for epilepsy surgery, most commonly amygdalohippocampectomy (AH) with or without anterior temporal lobectomy (ATL) in temporal lobe epilepsy (TLE). Approximately 65% of patients treated with AH will be seizure-free.

Methods: Whole transcriptome analyses were performed to test the hypothesis that hippocampal tissue RNA expression differs between patients rendered seizure-free (SF) and non-seizure-free (NSF) to establish predictive prognostic biomarkers.

Results: Comprehensive analysis of hippocampal RNA expression revealed an upregulation in biological pathways consisting of glucuronidation, reproduction, and activation of matrix metalloproteinases prognostic for SF group.

Conclusion: Hippocampal tissue RNA expression is expected to enhance selection of TLE surgery candidates by establishing predictive prognostic biomarkers for successful outcome from operative AH/ATL. This research seeks to improve our understanding of pathophysiological TLE over-activation of the innate and adaptive immune system.

Biography:

From homelessness at 15 to obtaining Physiology, Sociology, and Neuroscience degrees to attending medical school, Albert Alan is a voice for the marginalized. He has tutored thousands of students and was one of 25 in the country to receive The Neurosurgery Research & Education Foundation Fellowship. Albert has joined Borderlands Produce Rescue, a 24-year-old nonprofit that rescues and distributes fresh produce. As President of his host site he has distributed over half-million pounds of fresh produce to local homeless shelters and low-income apartments located in food-deserts and started a scholarship to serve firstgeneration students. Albert strives to become one of 3,700 practicing board certified neurosurgeons serving 325 million people.

Speaker Publications:

1. Redefining the Value of Relationships

3rd World Neuron Congress; Webinar- December 15, 2020.

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