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2018 The Part The Cloud to RESCUE Brain Cell Degeneration in Alzheimer's Disease \$999,244

Cognitive decline in early stages of AD after EGCG and a multimodal therapy

This is a Phase 2 clinical trial to examine the efficacy of compound EGCG combined with multicomponent lifestyle changes as an approach to slow down cognitive decline in early stages of Alzheimer's.

Background

Nerve cells in the brain “talk” to other nerve cells by sending rapid signals to each other across specialized structures called synapses. Synapses connect one nerve cell to another, creating extensive nerve cell networks. The synapses between nerve cells could strengthen or weaken based on patterns of historical and future nerve cell activity. This phenomenon is known as synaptic plasticity and it forms the foundation for learning and memory within the brain.

Past studies have reported notable changes in plasticity and functionality of brain cells, which precede the loss of communication between nerve cells due to damage or cell death. In addition, alterations in connectivity between nerve cells have been observed in early Alzheimer's stages, (SCD) subjective cognitive decline (that means self-reported memory problems) and in Mild Cognitive Impairment. Dr. Rafael de la Torre proposes a therapeutic approach aimed at improving plasticity and functionality of brain cells in early stages of Alzheimer's and in people experiencing subjective cognitive decline.

Research Plan

For the study, Dr. de la Torre plans to use a drug called epigallocatechin gallate (EGCG) that has already established human safety. EGCG is commonly found as one of the organic compounds in green tea. This compound has antioxidant and anti-inflammatory properties, and is known to regulate insulin signaling. More specifically EGCG modulates the amyloid precursor protein, preventing it from forming the harmful amyloid plaques, and prevents the formation of abnormal tau.

Dr. de la Torre's project is specifically designed to include a low income and low education population drawn from the neighboring area of Hospital del Mar in Barcelona. The researchers propose to combine EGCG therapy along with a multicomponent lifestyle intervention technique that would take into account

PI

- Ph.D. in Toxicology, Barcelona University School of Pharmacy, 1979
- Director, IMIM-Hospital del Mar Medical Research Institute
- Past Deputy Head (1992) of Barcelona Antidoping Laboratory, Olympic and Paralympic games
- Full Member of Royal Academy of Pharmacy since 2017.

STUDY

- CADRO category: Translational Research & Clinical Interventions
- This is Dr.de la Torre's first Association award

medical comorbidities (additional diseases that may be co-occurring with primary disorder), diet, physical exercise, cognitive training etc. to conduct their 12-month study in people with SCD.

Dr. de la Torre will evaluate the efficacy of EGCG combined with a multipronged lifestyle intervention approach in improving brain connectivity and slowing down of cognitive decline, in the study population.

Impact

This is a first study that would provide clinical and scientific evidence of whether EGCG combined with a lifestyle intervention approach could slow down cognitive decline in early stages of Alzheimer's. Furthermore, the study results could help to create a proper intervention and support plan within the low income and low education community to reduce health disparities.