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2019 Part the Cloud: Translational Research Funding for Alzheimer's Disease (PTC)

S-Adenosyl Methionine for Alzheimer's Disease

This Phase II clinical trial will examine if boosting the levels of a naturally occurring protein, S-adenosyl methionine (SAME) helps slow the progression of Alzheimer's disease and reduces the level of harmful tau protein levels in the body.

PI

- Ph.D., University of Melbourne, Australia, 2015
- Founding Co-Chair of Emerging Stroke Clinicians and Scientists Special Interest Group, Stroke Society of Australasia, since 2017
- Head of Education and Training, Department of Neurology, Royal Melbourne Hospital, Australia, since 2018

Background

S-adenosyl methionine (SAME) is a naturally occurring protein (called an enzyme) in the body that is involved in many biochemical processes. This protein helps control chemical modifications to the DNA that are essential for turning genes "on" and "off." SAME also stabilizes other proteins that process tau protein in the brain. If processed incorrectly, tau protein can form harmful neurofibrillary tangles found in several neurodegenerative disorders such as Alzheimer's, frontotemporal dementia, progressive supranuclear palsy etc. amongst others.

SAME is already used as a dietary supplement to help treat depression, arthritis, and liver disease. Past studies suggest that individuals with Alzheimer's may have lower levels of SAME, although it is unclear if SAME is a potential therapy to help restore healthy tau processing in people with Alzheimer's disease.

STUDY

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

Research Plan

Dr. Nawaf Yassi and colleagues will perform a phase II clinical trial of SAME in people with mild cognitive impairment and early dementia due to Alzheimer's disease. The researchers will enroll 60 people in their study to receive a daily dose of SAME or placebo for six months. After six months, all participants will be invited to receive a daily SAME dose. Dr. Yassi will measure cognitive changes in participants and changes in chemical modifications to their DNA. Most importantly, the researchers will track harmful tau protein levels in the biological fluid sample surrounding the spinal cord, collected from participants during the study. Dr. Yassi believes that boosting SAME levels in the body could reduce harmful tau protein levels in study participants over time, reducing their risk of further developing cognitive disease.

Impact

This phase II clinical trial will help determine if SAME could be developed as a safe and affordable therapy for Alzheimer's. If successful, the study results could lead to future large-scale trials of SAME for Alzheimer's disease.