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Evaluating oral semaglutide as a treatment for Alzheimer's disease

This clinical trial will evaluate type 2 diabetes medication in a Phase 2a clinical trial as potential treatment for Alzheimer's disease

PI

- Ph.D., Imperial College London, UK, 2009
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STUDY

- CADRO category: Translational Research & Clinical Interventions

Background

Insulin is a hormone that helps the body maintain appropriate levels of sugar. Insulin can also be transported to the brain, where it helps maintain nerve cell energy levels and connections between nerve cells. Since insulin plays an important role in the brain, researchers believe insulin might also play a role in Alzheimer's progression. Past studies have shown that problems with how insulin sends signals in the brain also known as "insulin resistance" could lead to change in nerve cell networks and cause cognitive symptoms of Alzheimer's. As a result, studies have identified type 2 diabetes as a risk factor for Alzheimer's.

Dr. Paul Edison and colleagues propose to test the impact of a daily tablet called "oral semaglutide" on individuals with mild Alzheimer's disease. Semaglutide is already on the market as a treatment for type 2 diabetes.

Research Plan

Dr. Edison and colleagues will recruit 60 individuals with Alzheimer's to the study, from the memory clinics at the Imperial College London and Imperial College Healthcare NHS trust as well as other sites across the UK. All the participants will undergo detailed cognitive tests and physical examination. The participants will also undergo different types of brain scans to measure brain volume, brain glucose metabolism (ability of brain cells to convert glucose into energy) and nerve cell function. In addition, the participants will have blood samples taken to assess their glucose levels and to measure any radioactivity in the blood.

The researchers will then randomly divide the participants into two groups- one which receives the experimental drug compared to the other group which doesn't receive the actual drug. Dr. Edison and colleagues will first assess the safety and tolerability of the experimental drug in the participants. The researchers will then evaluate the impact of the experimental drug on brain glucose metabolism as well as nerve cell function, using special types of brain scans. Dr. Edison's team will regularly monitor the participants for vital signs, and perform safety blood tests. Furthermore, the

researchers will repeat the brain scans and other cognitive measurements in the participants 1 year after taking the drug, to evaluate its impact.

Impact

If successful, the study will help the researchers plan a larger study to evaluate the efficacy of the drug. The study results may also provide an understanding of the biological mechanisms by which insulin resistance may disrupt nerve cell function and communication in Alzheimer's.

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