

Imaging Amyloid Beta in the Retina

Background

Amyloid Beta protein is a marker for Alzheimer's disease. Currently the only definitive test occurs during an autopsy. There are other forms of dementia that have similar symptoms to Alzheimer's but which cannot be ruled out while the patient is still alive.

If there were a means for earlier detection of the Amyloid Beta protein then it would be possible to properly diagnose patients with Alzheimer's disease and start treatment at an earlier stage. This would lead to an improved quality of life for the patient and better longitudinal assessment of the effects of treatments on Amyloid beta, both in humans and animal models.

Description of the invention

Dr. Melanie Campbell has created methods to image amyloid beta in the retina of the eye in such a way as to diagnose, track, and potentially treat Alzheimer's disease.

The basic idea is to use an imaging method to characterize the amyloid beta in the neural layers of the retina, to classify and characterize the type of deposit, to quantify the amount present, and thereby to diagnose Alzheimer's disease and stage of the disease.

Advantages

Currently doctors treat patients on a "probable Alzheimer's disease" basis. This diagnosis is usually only made after the patient's condition has already deteriorated. Family members are usually the first to become aware of a loved one's memory problems, long before a doctor's diagnosis. Being able to detect and treat Alzheimer's disease early, before the person's condition has deteriorated, would allow for a higher quality of life than if treatment were to begin at a much later stage. It would also allow treatment of the patient for other forms of dementia if the test determines it isn't Alzheimer's disease. Other tests under development are more invasive and/or expensive, complex, and thus not broadly available.

Potential applications

- Early stage diagnosis of Alzheimer's disease.
- Tracking of the stages of Alzheimer's disease.

Reference

8810-7289

Inventor(s)

Dr. Melanie Campbell

Patent status

Issued U.S. 9,149,184, Chinese ZL201180033685.4 patents and applications filed in Canada and Europe

Stage of development

Prototype created, continued ongoing research

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