# Amyloid pet may lead to better treatment for Alzheimer's patients

June 8 2015

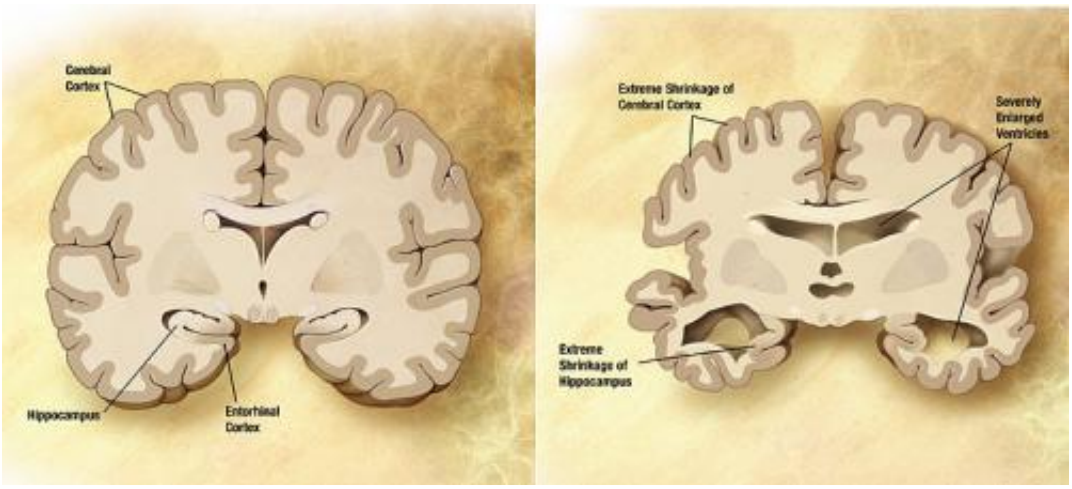


Diagram of the brain of a person with Alzheimer's Disease. Credit: Wikipedia/public domain.

New research presented during the 2015 annual meeting of the Society of Nuclear Medicine and Molecular Imaging (SNMMI) demonstrates that amyloid positron emission tomography (amyloid PET) scans of the brain provide clearer diagnosis and earlier, more effective treatment for Alzheimer's patients, when results of a more conventional PET scan remain ambiguous.

Researchers reviewed the clinical outcomes of two kinds of PET scans: a preliminary scan with a common radiotracer called fluorodeoxyglucose (FDG), which acts like glucose in the brain to capture images of

metabolic activity, and amyloid PET, which involves a different kind of imaging agent that binds to deposits of naturally occurring beta-amyloid proteins in the brain. Results of the study showed that for FDG-PET scans that did not provide a definitive diagnosis, an additional amyloid PET scan contributed to an accurate prediction of cognitive decline.

'By acquiring an amyloid imaging scan within a month of the indeterminate FDG-PET, managing physicians can treat patients with an Alzheimer's-like pattern of reduced brain metabolism with a better chance of preserving cognitive function,' said Erica Parker, lead author of the study and a research coordinator at the University of California, Los Angeles.

For this study, FDG and amyloid PET data from 100 study participants with mild cognitive impairment were evaluated independently in two blinded readings conducted by a radiologist and a nuclear medicine physician. Readings were documented as positive, negative or indeterminate for neurodegenerative disease.

Results showed 82 percent of patients whose readings were initially indeterminate experienced subsequent cognitive decline. Amyloid PET scans were found to be positive in half (50 percent) of cases that were indeterminate using FDG-PET alone. These results were then integrated with results of another study, which found that Alzheimer's treatment was administered earlier for 40 percent of patients with positive FDG-PET scans. Additionally, the subjects who began the Alzheimer's treatment earlier had better cognitive outcomes. Combining these analyses, the researchers found that up to 17 percent of those who had an amyloid scan after an ambiguous FDG-PET scan can expect to experience statistically significant improvements in cognition by the two-year follow-up.

More than 44.3 million people worldwide are estimated to have

Alzheimer's disease. These numbers are expected to increase to more than 135 million by 2050, according to 2013 data from Alzheimer's Disease International (ADI).

**More information:** Scientific Paper 191: "Projected value of amyloid imaging in improving long-term clinical outcomes in MCI patients with prognostically ambiguous FDG-PET"

Provided by Society of Nuclear Medicine