ABSTRACT

Alzheimer dementia (AD) is the commonest form of dementia. Although illiteracy is associated with high prevalence of dementia of the Alzheimer type (DAT), their relationship is still unclear. Nevertheless, mild DAT in illiterate participants seems to be due to brain atrophy.

In this study, we compared the impact of brain metabolism efficiency in healthy participants and less-educated patients with mild DAT using 2-fluoro-2-deoxy-D-glucose (18F-FDG-PET) positron emission tomography (18F-FDG-PET). Out of 43 eligible less-educated participants with dementia, only 23 (14 women and 9 men) met Diagnostic and Statistical Manual (DSM)-III-R or DSM-IV criteria for DAT and AD and were included. Participants with intracranial insults were excluded by brain magnetic resonance imaging and participants with metabolic or systemic conditions were excluded by blood sampling. In addition, 16 cognitively normal elderly (age >70 years), including 7 women and 9 men, were enrolled in the sham group. The PET imaging data were analyzed using statistical parametric mapping (SPM8) to determine reliability and specificity.

Glucose metabolic rate was low in the DAT group, especially in the middle temporal gyrus, middle frontal gyrus, superior frontal gyrus, inferior frontal gyrus, posterior cingulate gyrus, angular gyrus, parahippocampal gyrus, middle occipital gyrus, rectal gyrus, and lingual gyrus.

Our results showed that DAT patients with less education not only have prominent clinical signs and symptoms related to dementia but also decreased gray matter metabolism.

Keywords: Alzheimer dementia (AD), DAT, 2-fluoro-2-deoxy-D-glucose (18F-FDG-PET)

REFERENCES