Diagnosis for Dementia and utilization of the PET Imaging

MAKOTO SATO

President, Micron Inc. Head Office

KENGO ITO, M.D., Ph.D.

Head, Department of Clinical and Experimental Neuroimaging

Center for Development of Advanced Medicine for Dementia

National Center for Geriatrics and Gerontology

Summary

There have been many reports on the usefulness of the FDG-PET (FDG: [F-18] fluorodeoxy-glucose, PET: Positron Emission Tomography) in the diagnosis of Alzheimer's disease (AD), therefore the scientific evidence for it has been established. Furthermore, using the statistical image analysis such as SPN (statistical parametric mapping) and 3D-SSP (three dimensional stereotactic surface projection), etc. hold promise for enhancing diagnostic ability. Also in early diagnosis of AD, FDG-PET is regarded as a tool which can predict the transition from MCI (mild cognitive impairment) to AD. Establishment of scientific evidence based on further clinical studies is expected. On the other hand, amyloid imaging is being applied in a clinical setting. There is the possibility that amyloid imaging will detect presymptomatic or super early detection of AD never before possible, and this merits much further research. PET is expected to play a significant role in the improvement of accuracy and efficiency in clinical studies for anti-AD drugs.