

Comparison of I-123 IMP and Tc-99m HMPAO SPECT studies with PET in dementia

Yasuo KUWABARA* Yuichi ICHIYA* Makoto OTSUKA*, Takashi TAHARA*,
Toshimitsu FUKUMURA, Ranjan GUNASEKERA*, Atsushi ICHIMIYA** and Kouji MASUDA*

**Department of Radiology, **Department of Psychiatry, Faculty of Medicine, Kyushu University, Fukuoka*

We compared I-123 IMP and 99m-Tc HMPAO SPECT studies with 0-15 H₂O and F-18 FDG PET studies, and evaluated the clinical significance of SPECT studies in dementia. Seventeen patients including 9 patients with Alzheimer's disease, 3 patients with Pick's disease and 5 patients with multi-infarct dementia were studied. IMP and HMPAO SPECT studies could not detect mildly affected areas when compared with FDG PET. However, they revealed decreased perfusion in the bilateral parietal regions in Alzheimer's disease and in the bilateral frontal regions in Pick's disease, while MRI and/or CT showed mild to moderate cerebral atrophy. IMP and HMPAO SPECT studies can be easily performed in clinical practice, and these findings were useful in the differential diagnosis of dementia. Our preliminary results suggested that SPECT studies with I-123 IMP and Tc-99m HMPAO, despite their limitations, are useful in the differential diagnosis of dementia.

Key words: Emission Computed Tomography, Dementia