## **Summary**

## Assessment of Brain Cell Function Using <sup>123</sup>I-IMP SPECT of Cerebral Blood Flow and Visual Evoked Potential by Photic Stimulation in Normal and Demented Elderly Subjects

Kimikazu Ogawa\*,\*\*, Hideyo Katsunuma\*\*, Hitoshi Ishida\*\*\* and Masaru Takasaki\*,\*\*

\*Department of Geriatric Medicine, Tokyo Medical College \*\*Department of Internal Medicine, Tachikawa Medical Center, Yuyukenkomura Hospital \*\*\*Department of Radiology, Tachikawa Medical Center, Tachikawa General Hospital

Cerebral blood flow was quantitatively measured using <sup>123</sup>I-IMP SPECT by photic stimulation and visual evoked potential (VEPs) in normal and dementia subjects: 8 with Alzheimer-type dementia, 9 with cerebrovascular dementia and 7 normal elderly subjects were divided into the three groups based on the Clinical Dementia Rating (CDR) grade: Group I (CDR 0), Group II (CDR 0.5–1), Group III (CDR 2–3).

The <sup>123</sup>I-IMP SPECT measurement was conducted at rest with the eyes closed and also during photic stimulation. VEPs were measured simultaneously.

The results reveal prolongation of the P2 latency of

the VEPs prolonged in accordance with the increasing severity of the dementia, and quantitative cerebral blood flow was lower in Group II and Group III than in Group I at rest, while during photic stimulation it significantly increased in Group I and II, but showed no change in Group III.

The results suggest that quantitative measurement of cerebral blood flow using <sup>123</sup>I-IMP SPECT by photic stimulation may enable more detailed assessment of brain cell function.

**Key words:** <sup>123</sup>I-IMP, Dementia, Visual evoked potential, Cerebral blood flow, Photic stimulation.