Annals of Nuclear Medicine Vol. 3, No. 3, 111–118, 1989

Cerebral blood flow, oxygen and glucose metabolism with PET in progressive supranuclear palsy

Makoto OTSUKA,* Yuichi ICHIYA,* Yasuo KUWABARA,* Yoshinori MIYAKE,* Takashi TAHARA,* Kouji MASUDA,* Shinichi HOSOKAWA,** Ikuo GOTO,** Motohiro KATO,*** Atsushi ICHIMIYA**** and Motohiro SUETSUGU****

**Department of Radiology, **Department of Neurology, ***Department of Neurophysiology, ****Department of Neuro-psychiatry, Faculty of Medicine, Kyushu University, Fukuoka 812, Japan*

Cerebral blood flow, cerebral oxygen metabolic rate and cerebral glucose metabolic rate were measured with positron emission tomography (PET) in four patients with progressive supranuclear palsy (PSP). Decreased blood flow and hypometabolism of oxygen and glucose were found in both subcortical and cortical regions, particularly in the striatum including the head of the caudate nucleus and the frontal cortex. The coupling between blood flow and metabolism was preserved even in the regions which showed decreased blood flow and hypometabolism. These findings indicated the hypofunction, as revealed by decreased blood flow and hypometabolism on PET, both in the striatum and the frontal cortex, and which may underlie the pathophysiological mechanism of motor and mental disturbance in PSP.

Key words: Progressive supranuclear palsy, Subcortical dementia, Positron emission tomography