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THE VALUE OF RADIONUCLIDE CEREBRAL ANGIOGRAPHY IN ISCHEMIC CEREBROVASCULAR DISEASE  
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The value of radionuclide cerebral angiography in the diagnosis and postoperative followup of ischemic cerebrovascular disease was evaluated with regard to both the sequential image and time-activity curve in comparison with the findings of X-ray CT and contrast angiography.

The sequential image showed hemispheric or territorial misery perfusion (MP) in 58 of a total of 84 cases, and revealed subsequently a collateral perfusion (CP) in the area of MP in 39 cases. X-ray CT disclosed no low density area (LD) in 15 cases with MP and in 7 with both MP and CP. Detecting CP was valuable to confirm small MP of the anterior cerebral territory or its watershed zone, and was easy by means of noting any laterality in the pattern of the time-activity curve. Luxury perfusion (LP) was shown in 9 cases those except one had low density area on X-ray CT and hot area on brain scintigraphy. The finding of occlusive change of the internal carotid artery as well as CP was corresponding to that on contrast angiography. And, these findings were well responsive to postoperative change of cerebrovascular flow after shunt operation or endoarterectomy in 14 cases.

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SINGLE PHOTON EMISSION TOMOGRAPHY WITH N-isopropyl- (I-123)p-iodoamphetamine IN DEMENTIA. C-W.Sim, T.Kimura, K.Utsunomiya, T.Ishimaru, H.Maeda, T.Kawai and H.Akagi. Osaka Medical College.

The increased life expectancy in developed countries has greatly altered the age structure of population with a proportional increase in the older age groups. As a consequence, dementia has become an important medical and social problem. But great uncertainties remain concerning the etiology and pathogenesis of the patients with senile dementia of Alzheimer type (SDAT).

Six normal subjects, 12 SDAT patients and 6 patients with multi infarct dementia (MID) were studied with single photon emission tomography (SPECT) using N-isopropyl-(I-123) p-iodoamphetamine (IMP). SPECT was carried out from 30 minutes after the injection with 3.0mCi of IMP. After the count ratio of each ROI to the average were calculated, Student's t test of mean differences were conducted.

The ratios of right inferior frontal region and right superior frontal region were significantly small for the SDAT subjects compared with the normal subjects.

The findings of this study may suggest the pathogenesis of SDAT. There is necessity for further studies.

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STAGE DIAGNOSIS OF ALZHEIMER'S DISEASE AND JUDGMENT OF EFFECT IN TREATMENT OF TRH USING I-123 IMP-SPECT. T.Takahashi, M.Kubota, T.Tsuda, K.Morita, \*M.Fujii, \*R.Fukatsu, and \*N.Takahata. Department of Radiology and \*Neuropsychiatry, Sapporo Medical College.

We evaluated local cerebral blood flow by I-123 IMP-SPECT in 6 cases of Alzheimer's disease (early stage 2 cases, middle stage 4 cases). In early stage bilateral parietal and occipital area were low accumulation of I-123 IMP, as the disease progresses low accumulation area of I-123 IMP spread to bilateral frontal and temporal lobe. These findings corresponded to clinical symptoms of disease staging, so that, we suspected that I-123 IMP-SPECT was useful for staging of Alzheimer's disease. After the treatment of TRH (M.I. 2mg/day), clinical symptoms of Alzheimer's disease improved (4 cases improved, 1 case no change). This corresponded to increased radioactivity in low I-123 IMP accumulation area, bilateral frontal lobe particularly. We recognized that by using I-123 IMP accumulation can judge the effect of TRH and other pharmaceuticals in the treatment of Alzheimer's disease. From these findings of I-123 IMP SPECT, we could carried out easily the differential diagnosis between Alzheimer's disease and multi infarct dementia.

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CEREBRAL BLOOD FLOW IN DEMENTIAS USING DYNAMIC SPECT WITH INHALED Xe-133. M.Shinohara, S.Kawakatsu, M.Yazaki, S.Totsuka, A.Komatani, K.Yamaguchi, Yamagata University School of Medicine, Yamagata.

We measured regional cerebral blood flow (rCBF) using Xe-133 inhalation technique and evaluated cognitive function in 11 patients with senile dementia of Alzheimer type (SDAT) (mean age  $\pm$  SD, 62.5  $\pm$  12.9y), in 9 patients with multi-infarct dementia (MID) (71.4  $\pm$  4.3y) and in 7 normal subjects (67.7  $\pm$  7.2y).

Mean CBF was lower in patients with SDAT and MID than in normal subjects. There was a significant positive correlation between mean CBF and the scores on Hasegawa Dementia Rating Scale in SDAT patients, but no significant correlation was found between these two scales in MID patients. In SDAT patients, CBF became decrease in temporoparietal regions in relation to the severity of dementia. In MID patients, rCBF in basal ganglia and frontal regions decreased.

These findings may reflect the underlying pathophysiology of SDAT and MID.