

133

FOLLOWUP ANALYSIS OF REGIONAL CEREBRAL BLOOD FLOW IN VASCULAR DEMENTIA BY Xe-133 INHALATION METHOD.
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We reported at last year's conference that cerebral blood flow(CBF) analysis of vascular dementia showed statistically lower values compared with cerebral infarction without dementia by the Xe-133 inhalation method.

This year we report new results from followup CBF analysis of vascular dementia and cerebral infarction without dementia by the Xe-133 inhalation method.

Twenty-seven cases of cerebral infarction were investigated. There were 12 cases of vascular dementia and 15 cases of cerebral infarction without dementia. The first examination was performed 7.6 mean months after onset in vascular dementia and 5.3 mean months after onset in cerebral infarction without dementia. The second examination was 4.0 mean months later in vascular dementia and 6.7 mean months later in cerebral infarction without dementia.

Vascular dementia tended to show lower CBF values compared with cerebral infarction without dementia and lower CBF (Fl) values on the followup examination. This lower CBF values on the followup examination were obviously decreased in an unaffected hemisphere.

136

FOURIER PHASE ANALYSIS OF THE BRAIN RADIO-NUCLIDE ANGIOGRAPHY FOR THE STUDY OF CEREBRAL HEMODYNAMICS: EVALUATION OF NEUROSURGICAL TREATMENTS FOR THE PATIENT WITH CEREBROVASCULAR DISEASES.

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In the 44th annual meeting of the Japan Radiological Society, we presented a Fourier-phase-analysis method to analyze the phase distribution of the radionuclide angiography to study the hemispheric asymmetry of cerebral hemodynamics. In the present study, we applied the method to evaluate the cerebral hemodynamics of the pre and post neurosurgical treatment of the patient with cerebrovascular diseases.

We used a scinticamera(Maxi400T,GE Co.) and a minicomputer(Simis 3,Informatek Co.). The detector was placed over the head of the patient in a supine position. The data were collected by the computer for 90 sec. in the frame mode following the intravenous injection of the ^{99m}Tc -RBC or ^{99m}Tc -HSA. The data of the first-pass through the brain were processed by the Fourier phase analysis and the phase and the amplitude images were obtained. Then the phase images were observed by the cine mode display on the TV.

In a patient with the right cerebral infarction, the phase distribution was delayed in the ischemic cerebral hemisphere when compared with the opposite hemisphere. Following the STA-MCA anastomosis, the delay in the phase distribution in the right cerebral hemisphere was improved.

135

SINGLE PHOTON EMISSION CT IN CEREBROVASCULAR DISEASES. S.Nishimura,K.Emoto,Y.Tokuda,M.Kobayashi,S.Kato, and R.Takao. Kitakyushu General Hospital, Kitakyushu. T.Uozumi.Hiroshima University,Hiroshima.

The availability of single photon emission CT(SPECT) for cerebrovascular disease has been often discussed. This report evaluates cerebral blood flow(CBF) in various types of cerebrovascular disease by means of SPECT, ultrasonic quantitative flow measurement(QFM) and digital subtraction angiography(DSA), taking into CT findings. The CME has been also compared with these results in reference to the clinical symptoms. We obtain 3 slices of CBF mapping from one patient by Xe-133 inhalation method using Tomomatic64(MEDIMATIC, Denmark). Velocity of blood flow in common carotid artery, its diameter and blood flow are examined by QFM-1000(NIHON KOHDEN), DSA image by Angioimager(NIHON AVIONICS), CME by ATAC-450. SPECT is superior to other methods for measurement of CBF, but the results of QFM, DSA and SPECT are correlative each other. QFM has the advantages of its safety and easiness. Intravenous DSA shows us more natural blood flow image than conventional angiography, and its image agrees with those of SPECT.

137

EFFECT OF ASPIRIN AND TICLOPIDINE ON PLATELET ACCUMULATION IN CAROTID ATHEROSCLEROSIS: ASSESSMENT BY DUAL-TRACER METHOD USING In-111 PLATELETS AND Tc-99m HSA

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The effect of aspirin and ticlopidine on platelet accumulation in carotid atherosclerosis was studied, by a dual-tracer method using In-111 platelets and Tc-99m HSA, in a group of 12 patients with ischemic cerebrovascular disease (CVD). The degree of platelet accumulation was expressed as the ratio of radioactivity of In-111 platelets deposited on the vascular wall to those circulating in the blood pool (PAI, platelet accumulation index). PAI values were measured before and after the treatment with aspirin 325 mg bid and together with ticlopidine 100 mg tid. Aspirin reduced mean (\pm s.d. mean) PAI (%) from 29.5 ± 7.0 to 11.2 ± 8.5 ($P < 0.01$), whereas ticlopidine did not (29.5 ± 7.0 vs 26.6 ± 18.7). The regions which did not show significant elevation of PAI ($< 13.9\%$), accumulated few, if any, labeled platelets and antiplatelet therapy had no significant influence. Our results first demonstrated that short term of aspirin therapy reduces platelet accumulation at the carotid atherosclerotic lesions in man.