一般演題抄錄

1. Changes in the Distribution of Regional Cerebral Blood Flow in Children with Moyamoya Disease: An Analysis Using ^{99m}Tc- HMPAO SPECT

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CT scan in moyamoya disease frequently shows low density areas confined to the cerebral cortex and subcortical regions sparing the basal ganglia. So we compared the cerebral blood flow (CBF) ratio between the cerebral hemisphere and basal ganglia in pateients with moyamoya disease with those in normal controls.

We studied 16 children with angiographically diagnosed moyamoya disease (11 males and 5 females ; mean age 8.4±3.1 years). 20mCi of ^{99m}Tc-labelled hexamethylpropyleneamine oxime (HMPAO) was injected intravenously and single photon emission computed tomography (SPECT) scanning was performed. Cross-sectional images were corrected for tissue absorption employing Chang's method. The coronal slices containing basal ganglia and thalamus were selected and were reformed as a single slice by group add technique. Two regions of interest (ROIs) were defined by the collection of pixels in the area of deep gray matters (ROI-1) and by those in the bilateral cerebral hemisphere above the former (ROI-2). Using average pixel counts in both ROIs, hemisphere to deep gray CBF ratio was obtained in each patient. Using Student's test, the results were compared with those in 10 normal controls (7 males and 3 females ; mean age 6.5±2.5 years).

In 10 normal controls the range of the average pixel counts of ROI-1 was from 12,186 to 14,692 and the of ROI-2, which contrains subcortical white matter as well as the cortex, was from 10,984 to 13,690. Hemisphere to deep gray CBF ratio in normal control was 90.6±2.9%. In 16 patients with moyamoya disease the range of the average pixel counts of ROI-1 was from 11,121 to 16,623 and that of ROI-2 was from 8,864 to 12,875. Hemisphere to deep gray CBF ratio was decreased to 81.5±6.1% in patients with moyamoya disease ($p<0.001$).

We conclude that the blood flow to the cerebral cortex and white matter is decreased more significantly than that to the deep gray matter in moyamoya disease. This finding is relevant to the fact that infarctions frequently occur in the cortex and subcortical areas sparing the basal ganglia. Although the basal ganglia are supplied by the abnormal moyamoya collateral vessels, CBF may be maintained above the level enough to escape the ischemic damage.

2. Usefulness of ^{99m}Tc-HMPAO SPECT in the Localization of the Epileptic Focus in Temporal Lobe Epilepsy: Comparison with EEG, MRI and CT

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