Brain scintigraphies by I-123 IMP (n-isopropyl-p-iodoamphetamine) in patients with hemi or, quadraplegia.

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Brain scintigraphies were carried out in three different groups consisting of 21 patients, 10 with the acute infantile hemiplegia after 2 to 25 years of asphixic birth, and 4 asphixia of the new borns. Among the first group of 10 AIH patients, 5 had hemispherical defects and the rest had the defects in the territory of MCA. However the other side of the brain had intact RI uptakes. In the second group, the patients with asphixia at birth had similar defects to that of AIH, except one with quadraplegia who had a large area of decreased RI uptake in the central region. The third group of patients with the asphixia of the newborn had much different patterns of IMP uptake from the above. One had normal homogeneous distribution, two had almost no brain uptake. We carried out two IMP scintigraphies in the last patient, with no brain uptake on the first trial and the patchy ones on the second trial which seemed to show the improvement of the brain blood supply. This baby did not show any neurological abnormalities after 10 months. These results would suggest that this noninvasive examination of the brain blood flow is a useful tool for early diagnoses of the abnormality of the brain blood flow.

We administered intravenously 3 – 6 mCi of N-isopropyl-p-I-123-iodoamphetamine (IMP) for total 19 cases of 4 cases with metastatic tumor, 3 cases with meningioma, 3 cases with glioblastoma multiforme, 3 cases with astrocytoma, 1 case with oligodendroglioma, 2 cases with malignant lymphoma, 2 cases with pituitary adenoma and 1 case with neurinoma employing SPECT device (HEADMOS-II) from April of this year, and early images and delayed images were obtained from immediately after and after 3 – 8 hours of intravenous administration, respectively. Tomographic maps of local cerebral blood flow (CBF) with Xe-133 and with IMP were compared in 14 cases, and the following results were obtained. The early images of CBF study and IMP study were similar except 1 case of meningioma. In meningioma, there were cases without accumulation by IMP study. In 2 cases of astrocytoma, the accumulation of IMP was noted by the early image of IMP study.