

## Evaluation of crossed cerebellar diaschisis in 30 patients with major cerebral artery occlusion by means of quantitative I-123 IMP SPECT

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Quantitative crossed cerebellar diaschisis (CCD) and the correlation with a reduction in supratentorial regional cerebral blood flow (rCBF) and cerebrovascular reserve capacity (CVR) were investigated in clinically stable patients with major cerebral artery occlusion by the iodine-123-*N*-isopropyl-*p*-iodoamphetamine (I-123 IMP) single photon emission computed tomography (SPECT) method. Thirty patients with major cerebral artery occlusion underwent SPECT by the I-123 IMP autoradiographic method. Regional CBF was measured in the cerebral hemisphere, frontal and parietal lobes, temporo-parietal lobe, and cerebellum both at rest and after administration of acetazolamide. Eighteen of 30 patients (60%) had CCD. CCD was significantly related to magnetic resonance imaging evidence of infarction. Quantitative CCD was 17% and the CVR in the cerebellum was preserved in patients with CCD. There was a significant difference in CBF and CVR between the affected and normal sides in all regions of interest in the patients without CCD [CBF (ml/100 g/min): hemisphere (H), normal side (N):  $31.4 \pm 6.8$ , affected side (A):  $27.5 \pm 7.4$ ;  $p < 0.05$ . CVR: H, N:  $0.56 \pm 0.38$ , A:  $0.42 \pm 0.18$ ;  $p < 0.01$ ]. CCD is common in patients with major cerebral artery occlusion, and quantitative I-123 IMP SPECT is helpful in detecting CCD in clinically stable patients with occlusion of major cerebral arteries.

**Key words:**  $^{123}\text{I}$ -IMP, crossed cerebellar diaschisis, cerebral artery, occlusion, SPECT