ORIGINAL ARTICLE

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Crossed cerebellar diaschisis: a positron emission tomography study with L-[methyl-^{11}C]methionine and 2-deoxy-2-[^{18}F]fluoro-D-glucose

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Objective: Crossed cerebellar diaschisis (CCD) is defined as a depression of blood flow and oxidative metabolism of glucose in the cerebellum contralateral to a supratentorial brain lesion, as detected with positron emission tomography (PET) and single photon emission computed tomography. We examined whether L-[methyl-^{11}C]methionine (MET) uptake is affected in CCD. ***Methods:*** In 12 patients with a unilateral supratentorial brain tumor, we evaluated the uptake of 2-deoxy-2-[^{18}F]fluoro-D-glucose (FDG) and MET in the cerebellar hemispheres by means of PET. Asymmetry index (AI) was defined as a difference in the average count between the ipsilateral and contralateral cerebellar hemispheres divided by the average count in both cerebellar hemispheres. Patients with AI of FDG PET more than 0.1 and those with AI equal to 0.1 or less than 0.1 were classified as CCD-positive and CCD-negative, respectively. ***Results:*** Six patients were CCD-positive and others were CCD-negative in the FDG PET study. Between CCD-positive and CCD-negative patients, mean AI of MET was not significantly different (0.017 ± 0.023 and 0.014 ± 0.039, respectively). ***Conclusions:*** Different from glucose metabolism, cerebellar MET uptake was not affected in CCD. The present study may indicate that cerebellar MET uptake is independent of suppression of cerebellar neuronal activity.

Key words: crossed cerebellar diaschisis, 2-deoxy-2-[^{18}F]fluoro-D-glucose, L-[methyl-^{11}C]methionine, positron emission tomography