

学位論文要約
Extended Summary in Lieu of the Full Text of a Doctoral Thesis

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学位論文題目： Differences in brain metabolic impairment between chronic
Thesis Title mild/moderate TBI patients with and without visible brain lesions
based on MRI

学位論文要約：
Summary of Thesis

Introduction. Many patients with mild/moderate traumatic brain injury (m/mTBI) in the chronic stage suffer from executive brain function impairment. Analyzing brain metabolism is important for elucidating the pathological mechanisms associated with their symptoms. This study aimed to determine the differences in brain glucose metabolism between m/mTBI patients with and without visible traumatic brain lesions based on MRI.

Methods. Ninety patients with chronic m/mTBI due to traffic accidents were enrolled and divided into two groups based on their MRI findings. Group A comprised 50 patients with visible lesions. Group B comprised 40 patients without visible lesions. Patients underwent FDG-PET scans following cognitive tests. FDG-PET images were analyzed using voxel-by-voxel univariate statistical tests.

Results. There were no significant differences in the cognitive tests between Group A and B. Based on FDG-PET findings, brain metabolism significantly decreased in the orbital gyrus, cingulate gyrus, and medial thalamus but increased in the parietal and occipital convexity in Group A compared with that in the control. Compared with the control, patients in Group B exhibited no significant changes.

Conclusions. These results suggest that different pathological mechanisms may underlie cognitive impairment in m/mTBI patients with and without organic brain damage.