Poster PE-3

In vivo 1H MR Spectroscopic Findings in Traumatic Contusion of ICR Mouse Brain Induced by Fluid Percussion Injury

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목적 : To investigate the proton metabolic differences of the right parietal cortex with experimental brain contusions of ICR mouse induced by fluid percussion injury (FPI) compared to normal controls and to test the possibility that 1H magnetic resonance spectroscopy (MRS) findings could provide neuropathologic criteria in the diagnosis and monitoring of traumatic brain contusions.

대상 및 방법 : A homogeneous group of 20 ICR male mice was used for MRI and *in vivo* 1H MRS. Using image-guided, water-suppressed *in vivo* 1H MRS with a 4.7 T MRI/MRS system, we evaluated the MRS measurement of the relative proton metabolite ratio between experimental brain contusion of ICR mouse and healthy control subjects.

결과 : After trauma, NAA/Cr ratio, as a neuronal marker decreased significantly versus controls, indicating neuronal loss. The ratio of NAA/Cr in traumatic brain contusions was 0.90±0.11, while that in normal control subjects was 1.13±0.12 (p=0.001). The Cho/Cr ratio had a tendency to rise in experimental brain contusions (P=0.02). The Cho/Cr ratio was 0.91±0.17, while that of the normal control subjects was 0.76±0.15. However, no significant difference of Glx/Cr was established between the experimental traumatic brain injury models and the normal controls.

결론 : The present 1H MRS study shows significant proton metabolic changes of parietal cortex with experimental brain contusions of ICR mouse induced by FPI compared to normal controls. *In vivo* 1H MRS maybe a useful modality for the clinical evaluation of traumatic contusions and could aid in better understanding the neuropathologic process of traumatic contusions induced by FPI.

Acknowledgment: This study was supported by a grant of the Center for Functional and Metabolic Imaging Technology, Ministry of Health & Welfare, Republic of Korea (02-PJ3-PG6-EV07-0002).