Immediate effects of a 10 min walk in poststroke patients with spastic hemiparesis

Zukeren Makoto¹,², Sakamoto Keiko³, Moriki Takashi³, Banno Motohiko³, Sumiya Tadashi³, Nakamura Takeshi³, Nishio Shunji¹, Tajima Fumihiro³

¹Department of Rehabilitation Medicine, Baba Memorial Hospital, Osaka, Japan, ²Department of Rehabilitation Medicine, Wakayama Medical University Kihoku Hospital, Wakayama, Japan, ³Department of Rehabilitation Medicine, Wakayama Medical University, Wakayama, Japan

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[Purpose] Spasticity is a major disabling symptom in stroke patients. Clinically, one of the goals of management of stroke patients is the reduction of this spasticity. Based on the latest evidences concerning a motor recovery mechanism after a stroke, we hypothesized that a 10 min walk stimulates the motor cortices and modifies the spasticity of the affected extremities in stroke patients. To test this hypothesis, we evaluated the immediate effects of a 10 min walk on spasticity of the affected extremities in stroke patients.

[Methods] Twenty chronic stroke patients with hemiparesis (62 ± 2 years, mean ± SE) were the subjects of this study. Modified Ashworth Scale (MAS) was evaluated before and after a 10 min walk. Specifically, patients sat for 10 minutes initially, and then walked for 10 minutes. Immediately after the walk, they were made to sit and the MAS was evaluated.

[Results] The latency between the onset of stroke and the study was 5.12 ± 11.2 months. After a 10 min walk, a significant decrease in spasticity of the affected extremities was noted in the flexor muscles of the upper extremities and knee extensors (Wilcoxon signed-ranks test, p < 0.05): the MAS scores (mean ± SE) before and after a 10 min walk were 1.9 ± 0.2 and 1.5 ± 0.2 in the elbow (flexor), 1.5 ± 0.2 and 1.2 ± 0.2 in the wrist (flexor), 2.0 ± 0.3 and 1.5 ± 0.3 in the fingers (flexor), and 0.9 ± 0.2 and 0.5 ± 0.1 in the knee (extensor), respectively.

[Discussion] A 10 min walk significantly decreased spasticity of the affected extremities in stroke patients. Further studies are needed to clarify the mechanism of such improvements.