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Influence of differences in assistance method on walking on lower leg muscle activity in paralyzed late stance in post-stroke: From kinematic mechanics and neurophysiological point of view**Yasutada Yamamoto***Takarazuka Rehabilitation Hospital, Japan*

It is possible to improve the function in walking exercises after stroke even in therapist assistance. We mainly used two ways of assistance and chose the way to make the patient walk in a better posture. The difference in these methods of assistance affects kinematic mechanics and muscle activity, but the influence on neurological aspects is not clear. The purpose of this study was to examine the influence of differences in assistive method on kinematic and neurophysiological factors on post-stroke requiring assistance for walking. Subject was one sub-acute stroke, lower limb BRS was α . The method was a method in which one physiotherapist unlocks the knee joint of the long limb orthosis and posterior assistance gait (posterior) in which walk assistance was conducted from behind and two physiotherapists provide walk assistance from the side during walking (lateral). We analyzed to compare the kinematics and neurophysiological factor using EMG coherence analysis in two conditions. Walking speed, number of steps, plantar-flexor torque, gastrocnemius activity (MG) and beta band frequency in MG showed high values in lateral side. On the other hand, there were no significant changes in the tibialis-anterior activity and theta band in MG during assistive walking. From these results, it was suggested that differences in neurological aspects such as corticospinal excitability, in addition to the influence on kinematic dynamics factors, due to differences in assistive methods.

Biography

Yasutada Yamamoto has obtained Physiotherapist License from Tokushima College of Medical Sciences and Welfare, Japan.

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