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THE EFFECT OF ROBOT-ASSISTED LOKOMOTOR TRAINING ON GAIT RECOVERY: A MULTIVARIATE ANALYSIS.

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ABSTRACT

To explore the effect of LOKOMAT and LOKOMAT+Tizanidine on the improvement of walking capacity for people with spinal cord injury (SCI), 20 SCI subjects with hypertonia spasticity at their ankle joints participated in a 12-session Lokomat training; among them, 10 subjects received Tizanidine. 1-hour LOKOMAT training was provided 3 times per week for 4-weeks. Subjects were evaluated 4 times for Timed-Up-and-Go, 10-Meter-Walking, and 6-Minute-Walking testings, at the baseline, 1-, 2- and 4-weeks after training. Latent Class Growth model was used to classify the LOKOMAT training speed, and clinical walking evaluations. Subjects in each treatment group could be classified into two subclasses for training speed and clinical evaluation. It was found that the training speed increased in all treatment group, while the subjects in LOKOMAT+Tizanidine presented a significant improvement of their training speed from the training session. The clinical evaluations classified subjects similarly, and no significant improvement of clinical measurements was observed for either treatment. The MVC dorsiflexion torque at the ankle joint was able to predict the class memberships of subjects for their walking capacity and can be used as a significant predictor for therapeutic functional recovery after spinal cord injury.

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