

척수재활

게시일시 및 장소 : 10 월 19 일(토) 08:30-12:30 Room G(3F)

질의응답 일시 및 장소 : 10 월 19 일(토) 11:00-11:30 Room G(3F)

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Satisfaction evaluation after four type of robot-assisted gait training in patients with paraplegia.

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Introduction

Robot-assisted gait training is an established intervention used to improve walking ability in patients with paraplegia. Although it has been shown that patients' subjective feeling is a key factor for successful rehabilitation, the satisfaction of patients after robot-assisted gait therapy is often neglected. The purpose of this study is to analyze the difference of satisfaction after four type of robot-assisted gait training in patients with paraplegia.

Methods

A total of 6 patients with paraplegia were included at four type of robot(Lokomat, Walkbot, Morning walk, GEO-system). Patients with paraplegia of American Spinal Injury Association (ASIA) Impairment Scale [AIS] A to D were included. Patients with limb fracture, contracture, severe spasticity or other comorbidities that can limit robot-assisted gait training were excluded. Each patient performed three simple PT for 30 minutes before applying the gait training robot, and then four gait training robots were applied three times each for 30 minutes and we evaluated their satisfaction, efficiency and stability of each type of robot at the end of each training session. Demographic data such as the sex, age, height and weight of the patient were collected and the severity of spinal cord injury was evaluated using AIS. Satisfaction, efficiency and stability were assessed on a 10-point scale by the patient reported method. The relationship between demographic data and outcome was analyzed according to type of robot and AIS.

Results

3 patients were AIS A and AIS B, C and D were one each. Of the four types of robots, the GEO system had the highest overall average score(8.2) of satisfaction, efficiency and stability with the highest score in stability. It scored the highest score in terms of satisfaction and stability among four types of robots. Walkbot followed with the second-highest overall average score(8.16) with the highest score in stability among the three categories. Lokomat followed with the third-highest overall average score(8.06) with the highest score for stability among the three categories. Morning walk has the lowest score(7.87) among four types of robots. Satisfaction and stability are the lowest scores

among four types of robots, but the highest score among four types of robots in efficiency. Comparisons based on the severity of spinal cord injury showed no significant difference in satisfaction and efficiency ($p=0.054$, and 0.076 , respectively). In the stability, AIS A patients scored significantly lower ($p=0.004$) compared to AIS B patients, but there was no difference in other cases.

Conclusion

In this study, we compared the differences in satisfaction, efficiency and stability of robots. Of the four robots, the GEO system had the highest overall average score. Next was WalkBot, Lokomat, and Morning Walk had the lowest score. In order to compare the outcome according to the demographic data, a larger study is expected in the future.