

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)

### **P 3-134**

#### **Analysis of treatment effects for selection of SCI suitable for upper limb rehabilitation robot**

Duk Youn Cho<sup>1\*</sup>, Jung Eun Lim<sup>1</sup>, Joo Hwan Jung<sup>2</sup>, Su Jeong Lee<sup>2</sup>, Hae Young Kim<sup>2</sup>, Zee A Han<sup>2</sup>, Hye Jin Lee<sup>2†</sup>

National Rehabilitation Center, Dept. of Rehabilitation&Assistive technology<sup>1</sup>, National Rehabilitation Center, Department of Rehabilitation Medicine<sup>2</sup>

#### **Purpose**

The effects of upper extremity rehabilitation training of spinal cord injured patients(SCI) using upper limb rehabilitation robots(ULRR) have been studied and reported on the therapeutic effect. However, reporting of treatment effects was not consistent. In this study, patients who showed improvement in upper limb muscle strength and function after training of ULRR were analyzed to identify a group of patients suitable for treatment of ULRR.

#### **Method**

This study use the results of a study using Armeo power from 2015 to 2018. The ULRR training was conducted 15 times for 5 weeks 3 times a week. We used manual muscle test(MMT), and Korean version of spinal cord independence measure-3(KSCIM-3) for evaluation and analyzed the characteristics of the patients who showed changes in MMT.

#### **Result**

From 2015 to 2018, a total of 44 patients were treated with ULRR training. Of these, patients with improvement in muscle strength were classified as 'effective group' and patients without change in muscle strength were classified as 'ineffective group', 28 and 16, respectively. The mean age of the effective group was 53.89±15.71 years, and the onset period was 6.00±6.00 months. Seven patients with motor complete disease(25%) and 21 patients with incomplete disease(75%). The level of injury was 19(67.9%) in C2-5 and 9(32.1%) in C6-T1. The mean age of the ineffective group was 53.31±10.36 years and onset period was 6.87±5.701 months. Three motor complete disease(18.8%) and 13 patients with motor incomplete disease(81.2%). The level of injury was 12 in C2-5(75.1%) and 4 in C6-T1(24.9%). There was no significant difference between the general characteristics of the effective group and ineffective group and the pre-evaluation results, and there was a significant difference only in the post-evaluation of MMT C6 area(p<0.05). In the frequency of muscle strength change, the C6 area was the most frequency with 14, and C7 and T1 were 13, respectively.

## **Conclusion**

Though this study, it was confirmed that rehabilitation training using ULRR is effective in improving muscle strength of SCI. However, there was no difference between the general characteristics and the initial muscle strength of the effective group and ineffective group. Therefore, it can be said that the severity of the patient's damage and the level of the damage do not affect the effectiveness of the ULRR. The comparison between the two groups showed a significant difference in MMT C6 post-evaluation and the most frequent improvement in muscle strength. Thus, it is expected that the training through ULRR will be effective when training wrist extension and elbow extension. Therefore, ULRR training for SCI may be effective for patients who need intensive training for wrist and elbow. However, the results of this study may be limited as a result of simple comparison of patients showing changes in muscle strength. Therefore, it is necessary to confirm objective results through systematic analysis.

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