

Rehabilitation of Neuromyelitis Optica : a Case report

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Neuromyelitis optica(NMO, Devic syndrome) is a central nervous system demyelinating disease, classified by myelitis and optic neuritis. This clinical manifestation could be mischaracterized as multiple sclerosis(MS). Unlike MS, NMO has a severe clinical course and more acute progression disorder. Although several studies have demonstrated the effects of rehabilitation programs on MS, few cases that on NMO. In this article, we present two cases presenting with a rehabilitation program adapted for two NMO patients.

CASE 1

A 65-year-old woman confirmed NMO was admitted to our department for chronic onset left hand weakness and dystonia for one year ago. Neurological assessment according to the international standards for neurological classification of SCI(ISNCSCI) revealed C4 incomplete ASIA-D. Her grip & pinch power dynamometer was 11.8/5.4 kg, box & block test was 21/8 and nine-hole test was 31.97/64.33 seconds. Spinal Cord Independence Measure(SCIM) was estimated seventy-nine. We planned for focusing on left hand fine motor training through occupational therapy by strengthening and stretching muscle using E-link(Biometrics Ltd, EP21 System, H500) during one month. After rehabilitation, manual muscle testing was improved to grade 2/5 to 3+/5 in left upper limb specifically. Also, SCIM was improved seventy-nine to eighty-eight. Functional gains were made in bathing, upper extremity dressing and using chopsticks independently. Her grip & pinch power dynamometer was improved 15/7 kg, box & block test was 21/12, and nine-hole test was 28.27/42.21 seconds.

CASE 2

A 41-year-old woman diagnosed NMO in 2008 was admitted to our neurology department for developing weakness. Neurological work-up confirmed that she relapsed NMO. After caring for NMO, she transferred to our rehabilitation department. At the time of transfer, neurological assessment according to the ISNCSCI, revealed C1 incomplete ASIA-C, and SCIM was estimated forty-two. She was able to walk a short distance using a rolling walker, and berg balance scale(BBS) revealed twenty-two. Her physical performance test estimated 6-minute walk test (6MWT) was 110m, timed up and go (TUG) test was 31.7 sec. She received strengthening lower extremity and gait training using a lower-body positive pressure (LBPP) treadmill (AlterG Anti-Gravity Treadmill). After one month, her manual muscle testing improved to grades 1-2/5 to 3-4/5 generally, and ASIA scale improved C5 incomplete ASIA-D. SCIM was improved to by allowing walking independently and increasing lower-extremity dressing and toileting ability. BBS was improved to fifty, 6MWT was to 260m, TUG test was to 8.6 sec.

Conclusions

We concluded that the intensive rehabilitation therapy Resulted in neurological and functional gains in patients with NMO. Therefore, further studies are needed to validate rehabilitation protocols and effects.