THE EFFECT OF 4-WEEK INTENSIVE BALANCE TRAINING IN SPINOCEBELLAR ATAXIA

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[Purpose]

To examine the effects of a 4-week intensive balance training and to assess retention effects during follow up term in individuals with spinocerebellar ataxia (SCA).

[Methods]

This study was approved by research ethics committee of our institution (A2015-116). The study included five SCA6 patients, four SCA31 patients and two MSA-C patients (mean age: 64 ± 9.5 (SD) years, 6 male). Inclusion criteria was gait score of Scale for the Assessment and Rating of Ataxia (SARA) (< 3). Our program consisted of 1 hour each 5 training sessions per week with one-on-one instruction by physiotherapist. Patients did a self training once a day as well. Patients were assessed by scoring SARA, the Balance Evaluation System Test (BESTest), the Index of Postural Stability, strength of knee extensor muscles (Nm/kg), the Activities-specific Balance Confidence scale and Gait efficacy scale. We assessed those outcome at 4 weeks before intervention (E1), immediately before the first training (E2), immediately after the last training (E3) and after 1 month (E4). Statistical analysis was conducted by the nonparametric test.

[Results]

Across the 4 assessments, total score of the BESTest indicated a significant improvement (χ²=15.1, p=0.001, E1: 80.6 ± 11.6, E2: 81.6 ± 10, E3: 91 ± 9.5, E4: 86.6 ± 13). Only E2/E3 appeared significant change by Post hoc test. No significant change were found in other measures. It was significant change before and after intervention in the subcategories of Postural Responses of BESTest (P=0.03, E2: 9.7 ± 3.6, E3: 13.1 ± 3). The average of self-exercise frequency was twice a week.

[Discussion]

Our program improved balance function on the BESTest, and this effect did not persist in follow up term. More effective home exercise programs are needed.