



The Feasibility of a Rehabilitation Program in Patients with Neurodegenerative Ataxia

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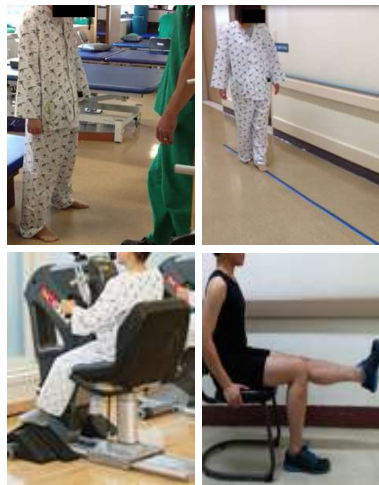


Background

- Neurodegenerative ataxia is a complex group of diseases that are characterized by gait and balance abnormalities, incoordination, and speech or eye abnormalities.
- Currently, there are no definitive medications or treatments available for these conditions, however, rehabilitation may be a potential treatment option.
- The purpose of this study was to evaluate the safety and feasibility of an outpatient-based rehabilitation program for patients with neurodegenerative ataxia.

Methods

- This retrospective study included patients who visited the tertiary hospital from July 2022 to December 2022.
- we enrolled patients who presented with gait difficulties due to neurodegenerative ataxia such as multiple systemic atrophy, cerebellar atrophy, and progressive supranuclear palsy.
- These patients underwent an outpatient-based rehabilitation program that focused on improving balance, gait, coordination, and activities of daily living. The program was tailored in each patient and included following modules.
 - Coordination & balance training
 - Stretching and strengthening of extremities
 - Progressive resistive exercise
 - Aerobic exercise



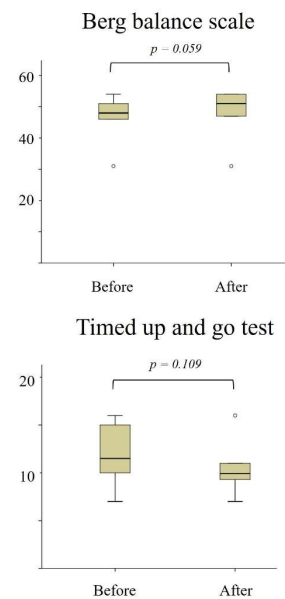
- The program was conducted over a period of three months, with one or two sessions per week, each lasting one hour.
- To measure the outcomes of the program, the Berg balance scale (BBS) and the Timed up and go test (TUG) were performed.

Results

1. Clinical characteristics

Characteristics	N (%) or mean \pm SD
Age, years	52.8 \pm 17.7
Male, n (%)	6 (100%)
Diagnosis	
Multiple systemic atrophy	4 (66.7%)
Progressive supranuclear palsy	1 (16.7%)
Cerebellar atrophy	1 (16.7%)
Disease duration (year)	2.4 \pm 1.6
Dysphagia	3 (50.0%)

2. Main outcome



- After three months of rehabilitation, BBS improved from **46.3** to **48.0** ($p = 0.039$), and the mean time for TUG decreased from **11.8** to **10.5** seconds ($p = 0.109$).
- No adverse events were reported in association with the program.

Conclusions

- This outpatient-based rehabilitation program was safely and successfully provided to patients with neurodegenerative ataxia, resulting in a positive trend towards improvement in balance and physical performance.
- Further studies with larger sample sizes and control groups are warranted to confirm these findings.