Function Strengthening in a Patient with Chronic Stroke and Low Back Pain: A Case Report

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Background and Purpose

Stroke

- In the US, the prevalence of stroke is approximately 795,000 annually and is the fifth most common cause of death.1
- Stroke impairments include hemiplegia, sensory loss, dyspraxia, and hemianopsia.2
- The chronic phase of stroke is defined as six months and beyond post-stroke.3

Low Back Pain

- Nearly 85% of adults will experience low back pain at some point in their life4
- Risk factors for LBP include age, educational status, psychosocial factors, physically demanding occupation, and high body mass index

Case Description

- 72-year-old male residing in a long-term care facility with CS impairments and LBP
- Complex medical history including a traumatic subdural hematoma with thalamic hemorrhage
- Patient had a recent decline in function leading to a physical therapy (PT) referral
- Impaired cardiopulmonary, musculoskeletal, neuromuscular, and integumentary systems
- Good cognition, high motivation, and strong staff support

Interventions

Gait Training

- High Intensity Interval Training with verbal cues for form

Cardiovascular Endurance

- NuStep (NuStep LLC: Ann Arbor, MI) was used four to five days per week to decrease fatigue during functional transfers and to increase gait distance.

Progressive Resistance Exercises

- Performed bilaterally three to four times per week for lower extremity strengthening

Figure 1. Weight acceptance on the right (A) versus left (B) lower extremity.

Figure 2. Start and end position to complete one repetition for each listed muscle group.

Outcomes

- Outcome measures assessed at week one (initial evaluation) and week 8 (discharge)

Subjective Measures

- Stroke Impact Scale - overall improved perceived recovery including daily activities, mobility, and hand use
- Activities Specific Balance Confidence Scale - improved from 41.88% to 49.38% of self-confidence
- Oswestry Disability Index - Improved from 57.8% to 38.0% disability from back pain

Objective Measures

- Timed Up and Go - improved from 95.37 seconds to 63.65 seconds
- Berg Balance Scale - improved from 40 to 44 points
- Tinetti Performance Oriented Mobility Assessment - improved from 16 to 19 points

Conclusion

- A functional strengthening program appears to have been beneficial for patient with multiple comorbidities
- Visit limitations for this patient included fiscal policies and sessions limited to 30 minutes
- In the future, it would be beneficial to consider creating a care map of the best practices or intervention guidelines for primary diagnoses in complex cases

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References


Personal Goals

Evidence Based Practice

Prior Level of Function

Patient with concomitant comorbidities