Balance and Strength Interventions for an Individual Post Left Sided MCA CVA: A Case Report

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Background

- Cerebrovascular accident (CVA), or stroke, is the fifth leading cause of death in the United States (US) with more than 140,000 deaths each year. It is the leading cause of long-term disability in the US, reducing functional mobility in more than half of all stroke survivors ages 65 or older. This condition costs the US approximately 34 billion dollars a year and it is estimated to increase to 108 billion per year by 2025. Strokes are caused by the interruption of the blood supply to the brain, which occurs when a blood vessel ruptures (hemorrhage stroke) or is blocked by a clot (ischemic stroke).

Tests & Measures

<table>
<thead>
<tr>
<th>Tests &amp; Measures</th>
<th>Initial Evaluation Results</th>
<th>Re-evaluation Results</th>
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<tbody>
<tr>
<td>Lower Extremity Function Scale (LEFS)</td>
<td>74% perceived disability rating</td>
<td>41% perceived disability rating</td>
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<tr>
<td>4 Stage Balance Test (4 SBT)</td>
<td>FT ST T ULS</td>
<td>FT ST T ULS</td>
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<tr>
<td>Timed Up &amp; Go (TUG)</td>
<td>27s</td>
<td>23s</td>
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<tr>
<td>Six-minute walk test (6MWt)</td>
<td>132 meters</td>
<td>140 meters</td>
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<tr>
<td>30 second chair stand (30 CST)</td>
<td>8 repetitions</td>
<td>8 repetitions</td>
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Outcomes Measures

- Lower Extremity Functional Scale
  - Initial Evaluation: 26%
  - Re-evaluation: 59%

Purpose

- The purpose of this case report is to describe the multifactorial management of care for a patient affected by chronic stroke in the outpatient physical therapy setting.

Case Description

- 71-year-old male with right sided hemiparesis, homonymous hemianopsia, Broca’s aphasia and dysphagia
- PMH: atrial fibrillation, hypertension, hyperlipidemia, pancreatitis, and right knee osteoarthritis.
- Participated in 10 physical therapy (PT) visits over the course of 7 weeks
- Primary PT goal was to increase his level of independence with ADL performance and functional mobility
- Community ambulator with use of front wheeled walker (FWW)

Interventions

- Cardiovascular Exercise
- Resistance Training
- Balance Training

Discussion & Conclusion

- The patient demonstrated significant subjective and functional improvements
- Improvements seen in global strength grades, AROM, 4 SBT, 30 CST, TUG, 6MWt
- Patient-reported lower extremity functional scale (LEFS) scores improved significantly
- These outcome scores suggested that combined global strengthening, cardiovascular exercise, balance training and caregiver education may improve functional mobility in this patient population.

Acknowledgements & References

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Image: MRI image of MCA CVA