Don’t Let Me Fall: Implementing the use of assistive standing device with functional task specific training can improve safety of transfers in a 65 y/o woman with Primary Lateral Sclerosis: A Case Report.
Megan Farr, SPT and Lindsay Perry PT, DPT, NCS

BACKGROUND PURPOSE

Primary Lateral Sclerosis (PLS) is one of the rarest neurodegenerative disorders within the Motor Neuron Disease (MND) spectrum found in 1 to 3% of patients within the MND realm. Similar to Amyotrophic Lateral Sclerosis (ALS), PLS presents with a dysfunction within the UMN of the corticospinal pathways.

Lack of research to support:
- Specific management of PLS
- Physical activity preventing the progression of the disease
- Functional improvements due to physical therapy interventions

The purpose of this case report is to describe improvements of a novel functional training program in a patient diagnosed with PLS.

CASE DESCRIPTION

65 y/o Female 12yr Dx of PLS
6 wks s/p intramedullary nailing of R tibia spiral fracture

Body Structure/Function
- Hamstring Spasticity
- Decreased Endurance
- Generalized weakness

Activity Limitations
- Non-ambulatory
- Dependent transfers

Participation Restrictions
- Fear of falling
- Limited social outings
- Inability to return home safely

Personal Factors
- Power wheelchair
- Depression
- Anxiety
- 12 yr Dx of PLS

Environmental Factors
- Supportive family
- Financial support
- 4 story home
- Narrow elevator

METHODS

Phase One
- General Therapeutic Exercise
- Static Stretching
- HEP
- Initial Home Evaluation

Phase Two
- Transfer Training (Beasyboard/SlideBoard(SB)
- HEP
- Home Evaluation

Phase Three
- Transfer training (standing aid)
- Sit-to-Stands
- HEP
- Home Evaluation

RESULTS

<table>
<thead>
<tr>
<th>Tests and Measures</th>
<th>Phase 1</th>
<th>Phase 2</th>
<th>Phase 3</th>
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<tbody>
<tr>
<td>Numeric Pain Scale Rating</td>
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<tr>
<td>(R) LE: 9/10 pain with movement (B) LE: 4/10 pain constantly</td>
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<td>(R) LE: 4/10 pain with movement (B) LE: 2/10 pain constantly</td>
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<td>(B) LE: 0/10 pain</td>
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<td>Manual Muscle Test</td>
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<td>(B) LE: 2+/5 with the exception of (R) knee flexion: 1/5 with pain.</td>
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<td>(B) LE: 3/5 with the exception of (R) knee flexion: 2+/5 with 4/10 pain</td>
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<td>(B) LE: 3+ with the exception of (R) knee flexion: 3/5</td>
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<td>RPE</td>
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<td>RPE: Not tested</td>
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<td>RPE: 7</td>
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<td>RPE: 3</td>
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<td>Modified Ashworth Scale</td>
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<td>(B) LE: 0/4 with the exception of (B) hamstrings: 3/4</td>
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<td>(B) LE: 0/4 with the exception of (B) hamstrings: 3/4</td>
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<tr>
<td>(B) LE: 0/4 with the exception of (B) hamstrings: 2/4*</td>
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<td>Functional Independence Measure</td>
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<td>FIM: 63/126= 50%</td>
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<td>FIM: 76/126= 60%</td>
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<td>FIM: 111/126= 88%*</td>
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<tr>
<td>Quality of Life Scale</td>
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<tr>
<td>QoL5: 67/112= 60%</td>
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<td>QoL5: 74/112= 66%</td>
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<tr>
<td>QoL5: 91/112= 81%*</td>
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*MCID met

DISCUSSION

The novel functional training program with sit-to-stands demonstrated improvements with functional strength, endurance, and increased independence.

Research suggests:
- Developing a more functional rehabilitation program is more beneficial than a general strengthening program in patients with ALS.
- Rehabilitation should focus on function-expanding aspects of assistive devises to ensure functional independence and safe mobility at home and in the community.

This supports this case report as benefits from functional and task specific training such as repetitive sit-to-stands had a better effect on the patient’s independence and QoL.

CLINICAL RELEVANCE

Anxiety and depression decreased with utilization of a more functional training protocol during physical therapy.

ACKNOWLEDGEMENTS

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REFERENCES

Please SCAN for References