Case Study: Effects of Psychosocial Factors on a Geriatric Patient with Guillain Barré Syndrome

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Case Study: Effects of Psychosocial Factors on a Geriatric Patient with Guillain-Barré Syndrome

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BACKGROUND

- Guillain-Barré Syndrome (GBS) in the geriatric population can be severely restricting functionally in a patient who does not have proper psychosocial support.
- GBS is a rare disorder in which nerve degeneration causes sensation loss, muscle weakness, shortness of breath, and fatigue.
- GBS is found to have 60% recovery rate of motor function, and independent ambulation is typically achieved for 80 percent of those diagnosed after six months. Our patient has surpassed this norm and has attained motor impairments of a longer, more permanent timeline.
- Recovery and compensation interventions to regain function and physical therapy would be beneficial for this patient population to prevent falls and continue to live a functional lifestyle.
- Other health behaviors can affect recovery rate and healing, such as smoking and alcohol consumption.

PURPOSE

The purpose of this case report is to determine how a change in intrinsic motivation and environmental factors help physical and functional improvements in a patient with GBS.

Interventions to promote this change included patient education about lifestyle choices along with endurance and balance exercises.

CASE DESCRIPTION

Patient Profile

- The patient is a 77-year-old male retired economics professor with limited social support, diagnosed with GBS in 2016. His comorbidities include DM II, diabetic neuropathy B LEs, cardiac valve impairments, and circulation impairments in fingers.

Previous Physical Therapy

- Regular participant in USAHS POINT lab since Sept 2017
- Received hand therapy and PT from other facilities

Body Structure/Function Impairments

- Balance and strength deficits
- Decreased endurance
- Thoracic kyphosis
- Decreased ROM and strength in L DF
- LE and core weakness
- Decreased proprioception

Activity Limitations

- Requires multiple breaks while walking with rollator and B AFOs
- Does not drive

Participation Restrictions

- Requires a caregiver 3 days per week for 4-5 hours to run errands and walk at the beach boardwalk
- Anxiety and depression due to a decrease in social interaction and decline in physical function over the past few years

PLAN OF CARE

Physical Therapy Sessions: 1-hour sessions, 1x/week for 4 weeks

- Removal of R AFO was indicated under supervised exercise to increase R LE strength and proprioception in available ROM.

Interventions:

- Diaphragmatic breathing
  - Encouraged to practice this technique while supine, seated, and standing to also activate core
  - Patient frequently complains of SOB with increased demand requirement; this allows him to increase endurance and oxygen demand

- Balance activities
  - Postural control with sitting balance
  - Standing balance
  - Obstacle course balance training

- LE strengthening
  - Sit to stand with Rollator

- Endurance
  - Gait training
  - Stationary bike

- Patient education
  - Emphasis on how lifestyle choices can affect progression
  - Motivation to continue exercising at home for improvements

OUTCOMES

<table>
<thead>
<tr>
<th>Outcome Measure</th>
<th>Initial Evaluation</th>
<th>Discharge</th>
</tr>
</thead>
<tbody>
<tr>
<td>TUG (without B AFO)</td>
<td>27.2 sec</td>
<td>19.0 sec</td>
</tr>
<tr>
<td>TUG (with B AFO)</td>
<td>22.0 sec</td>
<td>16.0 sec</td>
</tr>
<tr>
<td>Rhomberg</td>
<td>2 sec (EO)</td>
<td>20 sec (EO)</td>
</tr>
</tbody>
</table>

- After four weeks, the patient showed improvements in gait, strength, and endurance.
- He was able to walk for 5 minutes and 40 seconds without a rest break, but required verbal cuing only to stay motivated.
- Oxygen saturation remained above 95% with increased RPE during endurance activities due to the utilization of diaphragmatic breathing.
- Patient psychological state, community access, and general education about interventions/dosing had an effect on the patient’s participation in his prescribed HEP. His comorbidities hindered his overall progress over the course of his treatment and should be addressed to improve patient outcomes.
- Activities that were more salient and stimulating to the patient, such as a swimming class or participating in a social event were reported to be more likely to be completed. These types of activities may address the patient’s GBS and associated comorbidities.

CONCLUSION

- Evidence-based and patient-specific exercises that focus on LE strengthening, balance, and endurance lead to a greater functional outcome for a patient who is diagnosed with GBS
- Addressing lifestyle choices, such as drinking and smoking, is necessary to improve both physical and psychological function
- Intrinsic motivation shows better results in reaching rehabilitation goals

CLINICAL RELEVANCE

- When treating patients with multiple comorbidities and limited psychosocial support, it is critical to find methods that are reliable and evidence-based but also salient.
- Providing both physical therapy interventions and patient education about changing lifestyle habits are essential to achieve better outcomes and patient compliance. For example, the patient admitted self-treating his depression with alcohol, but recognized that lifestyle education that participating in aquatic exercise diminishes his depression. Making similar healthy substitutions to modify his lifestyle will lead to improved function and outcomes.

Without his AFOs, our patient walks with high steppage gait, increased varus, and lands with forefoot contact especially on the L LE.

With his AFOs, our patient walks with improved heel strike at IC and without L LE high steppage gait. Swing phase is now safer bilaterally.