

Clinical reasoning and intervention selection for a patient with acute alcoholic polyneuropathy: A case report



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Background on Alcoholic Polyneuropathy (APN)

- Alcoholic polyneuropathy is a sensorimotor peripheral polyneuropathy.
- APN usually affects individuals over 40 years old with a history of chronic alcoholism.¹
- Most cases occur chronically over several months.
- Acute cases of APN may develop over the course of weeks.
- Symptoms of APN include paresthesia and paralysis.
- There are a variety of suspected mechanisms for etiology for APN.
- Literature is sparse in relation to physical therapy management and interventions for a patient with acute alcoholic polyneuropathy.

Purpose

The purpose of this case report was to describe the clinical reasoning behind interventions selected for a patient with acute alcoholic polyneuropathy in the acute setting.

Case Description

- 33 year old male
- No past medical history
- Unemployed
- Reported drinking 3L of alcohol/week
- Reported symptoms of lower extremity numbness beginning 4 weeks prior to admission
- 10 days before admission became abstinent from alcohol
- Admitted to ER with complaints of severe lower extremity weakness
- Diagnosed with acute alcoholic polyneuropathy after 2 days in acute care
- Discharged to inpatient rehab after 5 days in acute care

Intervention Outline					
	Day 1	Day 2	Day 3	Day 4	Day 5
Session Length	62 min	46 min	45 min	48 min	45 min
Therapeutic Exercises	Patient education using a towel for assisted dorsiflexion. Therapeutic exercise in long sit: 1 set of 10 repetitions of quad sets and heel slides	Therapeutic exercise in supine: 1 set of 10 repetitions of quad sets, heel slides, and hip abd/adduction	Supine functional mobility reassessed: patient completely independent	Therapeutic exercise in supine: 2 sets of 10 repetitions of quad sets, heel slides, and hip abd/adduction	Patient transferred to Inpatient Rehabilitation for further therapy
Functional Mobility	Functional mobility assessed in evaluation	Therapeutic exercise in sitting: 1 set of 10 repetitions of short arc quads and marching	Patient transferred from Encore® to wheelchair and used bilateral upper extremities to propel chair 70 ft. back to room	Therapeutic exercise in sitting: 2 sets of 10 repetitions of short arc quads and marching	Transfer training from bed to wheelchair using a slide board
Gait Activities	Attempt at sit to stand maximum two assist to front wheel walker	Pre-gait activity: 1 set of 5 repetitions of sitting with forward lean and weight shift to lower extremities	Encore® used for partial body-weight support training with maximum two assist, ambulated 70 ft.	Therapeutic exercise in supine: 1 set of 3 repetitions of bridging with a pillow between the knees to prevent external rotation	Patient propelled wheelchair 200 ft. using bilateral upper extremities



Figure 1: Demonstration of Sit to Stand Using an Encore®

The seated patient is strapped into the Encore® using an appropriately sized belt, and the knee plate is adjusted to fit firmly on the patient's tibial tuberosities. The patient is instructed to hold onto the handles and relax as they are lifted into standing. When in standing, the patient can weight-bear through the lower extremities safely.

Initial Evaluation and Discharge Results after 5 Days of Treatment		
Tests & Measures	Initial Evaluation Results	Discharge Results
Gross Muscle Strength	Dorsiflexion: 0/5 Hip flexion: 3/5	Dorsiflexion: 1/5 Hip flexion: 4/5
FIM: Transfers	1= Total Assist	4= Minimal Assist
Gait	Not assessed at this time due to inability to stand	Wheelchair Locomotion FIM of 5= Supervised
Standing	Patient unable to stand with two person dependent assist to a front wheeled walker	Patient required maximum two person assist, as well as mechanical assistance to achieve and maintain standing
Sensation	Crude touch intact for lower extremities but diminished	No change from initial evaluation
Pain: Visual Analog Scale	0/10	2/10

Discussion

- Acute APN can occur over the course of weeks and can become immobilizing.
- This 33 year old male made minimal improvements with an aggressive practice of strengthening, functional mobility, and transfer training.
- It is unclear whether medical management or physical therapy was responsible for these improvements.
- Future research is needed to determine whether physical therapy or medical management can be most effective in treating patients with alcoholic polyneuropathy.

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References:
1. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3155558/> accessed September 4, 2015.