

A.T. Still University

Still ScholarWorks

OT Student Capstones

Occupational Therapy Department

2021

Development of Clinical Practice Guidelines for Chemotherapy-Induced Peripheral Neuropathy Rehabilitation

Rikki Silver

A. T. Still University

Follow this and additional works at: <https://scholarworks.atsu.edu/ot-capstones>



Part of the [Occupational Therapy Commons](#)

Recommended Citation

Silver, Rikki, "Development of Clinical Practice Guidelines for Chemotherapy-Induced Peripheral Neuropathy Rehabilitation" (2021). *OT Student Capstones*. 59.

<https://scholarworks.atsu.edu/ot-capstones/59>

This Capstone is brought to you for free and open access by the Occupational Therapy Department at Still ScholarWorks. It has been accepted for inclusion in OT Student Capstones by an authorized administrator of Still ScholarWorks. For more information, please contact mohammadaslam@atsu.edu.

Introduction

Chemotherapy-induced peripheral neuropathy (CIPN) is a common side effect of cancer treatment. Many patients experience debilitating symptoms of CIPN, impacting their ability to function safely and independently. This leads to significant implications for their health, well-being, and quality of life. Although occupational therapists (OTs) can play a crucial role, there is a lack of referral to occupational therapy (OT) services and no clear guidelines for functional rehabilitation of CIPN.

Purpose

The objective of this doctoral capstone was to provide rehabilitation practitioners with evidence-based, peer-reviewed clinical practice guidelines for assessing and treating patients with CIPN. The goal of the guidelines are to improve quality of care and access to rehabilitation services for patients and expand OTs' role and value in oncology rehabilitation.

Methods

- **Site:** ReVital Cancer Rehabilitation
- Comprehensive literature review was conducted
- ReVital certification courses, developed to educate clinicians on how to treat cancer-induced impairments & limitations, were audited
- Mentorship from the Director of Research and Clinical Development from the nation's largest provider of cancer rehabilitation was provided
- Clinical expertise was gained via ReVital regional professional development weekly meetings led by the National Medical Director
- Feedback from ReVital program OT/PT team members was sought throughout guideline development
- Frameworks utilized:
 - The International Classification of Functioning, Disability, and Health
 - Prospective Surveillance Model
 - Dietz Classification of Cancer Rehabilitation

Development of Guidelines

The practice guidelines give recommendations for assessment and treatment in rehabilitation management of CIPN across the cancer care continuum, beginning at diagnosis. The guidelines discuss the "core components of effective CIPN rehabilitation", including prospective surveillance, the use of objective measurements and patient-reported outcomes, and the use of multi-modal intervention/combined treatment approaches. In addition, it outlines safety considerations for patients undergoing neurotoxic chemotherapy, describes drug-specific clinical presentations of CIPN, and highlights the role of the multidisciplinary team. See center table for a summary of recommended OT treatment approaches discussed in the guidelines. The complete guideline is available upon request.

Implications

- Offers a pathway to assess patients and develop treatment plans
- Furthers OTs' role in oncology rehabilitation and defines its value in CIPN care; with evidence of positive outcomes, referrals to OT should follow
- Functions as a marketing tool to present to oncologists

Conclusion

These evidence-based guidelines allow for an opportunity to bridge the gap between research and clinical practice and improve quality of, and access to, rehabilitation services for individuals with cancer. The guidelines present what OTs/PTs can do for patient's with CIPN, using the pillars of evidence-based practice. Future guideline development should also consider patient values/beliefs in conjunction with clinical expertise and research. These guidelines contribute to increasing knowledge of CIPN rehabilitation among ReVital therapists, furthering the role of OT in oncology rehabilitation, and improving quality of life for individuals with CIPN.

Acknowledgments

- Tania Shearon, MOT, OTR/L, CHT, C-IAYT
- Aaron Bonsall, PhD, OTR/L
- Nicholetta Fortunato-Tamayo, MOT, OTR/L, CLT
- Mackenzi Pergolotti, PhD, MOT, OTR/L
- Tiffany Kendig, PT, DPT, MPH, CLT

Activity/Participation	
Therapeutic Exercise	<ul style="list-style-type: none"> • Multi-modal exercise: balance training, strength/resistance training, sensorimotor training, active range of motion, somatic yoga
Self-care/Therapeutic Activity	<ul style="list-style-type: none"> • Fine-motor tasks: task training, performing tasks with eyes open/closed and gloves on/off • Functional balance tasks: ADLs at sink, LE dressing, reaching for items in kitchen • Activity modifications: large/magnetic jewelry clasps, rubber on keyboards, visually watch hands during fine motor tasks • Psychoeducational program: electronic symptom assessment and self-care intervention
Body Structure/Function	
Neuromuscular reeducation	<ul style="list-style-type: none"> • Sensory reintegration and desensitization: exposure to different textures, vibration, intentional confounding • Exercise: aerobic/endurance exercise
Education (symptom management)	<ul style="list-style-type: none"> • Fall prevention for decreased touch thresholds: vision to compensate for sensory loss, household modifications, assistive devices • Skin protection for decreased temperature/pain thresholds: visual inspection of affected areas, cautious with sharp objects, proper footwear, bath thermometer to prevent burns, gloves when handling hot/cold items • Techniques for paresthesia/dysesthesia: protective clothing in cold weather, sheet cradles if experiencing pain from sheets brushing on feet • Pain management: deep breathing techniques, frequent position changes, TENS, NMES, kinesiotape, compression, gloves • Techniques to manage dizziness/autonomic symptoms: toe/ankle pumps before sitting/standing for 20-30 sec., compression binders and gradient compression stockings, practice adequate salt intake/hydration
Manual Therapy	<ul style="list-style-type: none"> • Soft tissue massage, trigger point release, stretches for intrinsic muscles, joint mobilizations, palmar/plantar fascial stretches, myofascial techniques
Cognitive Function	<ul style="list-style-type: none"> • Cognitive behavioral strategies: education about side effects, communication strategies to talk to providers regarding symptoms, goal setting, relaxation techniques, joint protection/energy conservation techniques