Investigating the impact of chemotherapy induced peripheral neuropathy in cancer survivors

UNSW AUSTRALIA

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IN FOCUS

Introduction: Chemotherapy-induced peripheral neuropathy (CIPN) is a major side effect of cancer treatment. It can lead to cessation of effective treatment, functional disability and reduced quality of life. Despite this, at present there is little understanding of the impact of CIPN on the lives of cancer survivors.

Aims and Hypotheses: The aim was **t**o investigate the impact of CIPN on the lives of Australian cancer survivors. We hypothesise that cancer survivors who have received neurotoxic chemotherapy will report CIPN symptoms, and that CIPN symptoms will show a negative impact upon quality of life.

Methods

Participants: Individuals living in Australia who received neurotoxic chemotherapy as a cancer treatment.

Measures: Participants completed an anonymous online survey, covering:

- Demographics
- Cancer diagnosis and treatment
- CIPN symptoms
- Other cancer-related side effects
- Physical activity levels

Validated measures included:

- Short-Form 36 quality of life questionnaire
- FACT/GOG-NTx neurotoxicity subscale
- Self-Administered Comorbidity Questionnaire
- International Physical Activity Questionnaire
- Douleur Neuropathique 4 neuropathic pain measure

Results : The mean age of respondents (N = 986) was 58 years. The majority were female breast cancer survivors (Table 1). Respondents reported receiving a range of chemotherapy types (Table 2).

Age (Mean ± SD)	58 ± 10.7 years
Female	820 (83%)
Male	163 (17%)
Cancer type	
Breast cancer	581 (59%)
Colorectal cancer	133 (14%)
Multiple myeloma	108 (11%)

Table 1. Participant demographics

Docetaxel	322 (33%)
Paclitaxel	312 (32%)
Oxaliplatin	123 (13%)
Thalidomide	87 (9%)
Unsure of chemotherapy name	102 (10%)

Table 2. Chemotherapy types reported by respondents

The majority of respondents (80%) reported neuropathic symptoms after treatment, and 77% reported current CIPN. Respondents completed cancer treatment 3.6 ± 3.9 years ago, and 29% of those who experienced CIPN report no improvement in symptoms since ceasing chemotherapy. Those with current CIPN reported functional difficulties relating to both upper and lower limbs (Table 3)

	Moderate to severe dysfunction
Walking	214 (28%)
Doing up buttons	170 (23%)
Feeling small objects	170 (23%)

Table 3. Moderate to severe functional difficulties reported by respondents

Respondents with current CIPN had lower quality of life scores via the SF-36 quality of life measure ($p < 0.005$) than those without current symptoms, and respondents with current CIPN who reported meeting Australian exercise guidelines had higher quality of life scores and lower CIPN scores via the FACT/GOG-NTx ($p < 0.005$) than those who reported not meeting exercise guidelines

Implications: Results of this survey indicate that CIPN has a lasting impact on cancer survivors. The majority of respondents reported current CIPN, which was moderately associated with functional difficulties. CIPN was also associated with decreased quality of life. However, physical activity may be associated with reduced CIPN symptoms and improved quality of life. These results support the need for further research in order to improve prevention, assessment and treatment strategies for CIPN.

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