PRE-TREATMENT NEUROPATHY IS ASSOCIATED WITH CHEMOTHERAPY INDUCED PERIPHERAL NEUROPATHY, DURING AND POST OXALIPLATIN TREATMENT FOR COLORECTAL CANCER

Trinity College Dublin
Coláiste na Tríonóide, Baile Átha Cliath
The University of Dublin

UNIVERSITY OF SURREY

Abstract 1795

S Faithfull[1], A Lemanska[2], A Harkin[3], C Kelly[3] & T Iveson[4]

[1] School of Medicine Trinity College, Dublin , [2] Faculty of health and Medical Sciences, University of Surrey, Guildford, UK, [3] Glasgow Oncology Clinical Trials Unit, Glasgow, UK, [4]Department of Medical Oncology, University of Southampton, UK

Introduction

Oxaliplatin is frequently used as part of adjuvant chemotherapy for colorectal cancer but can result in acute and long-term nerve damage resulting in chemotherapy peripheral neuropathy (CIPN). CIPN is characterised by a polyneuropathy/ neuropathy experienced as sensory loss, neuropathic pain and motor loss, usually in the hands and feet. These symptoms impact on an individual's gait, balance, physical functioning, increase falls, and can reduce quality of life[1].

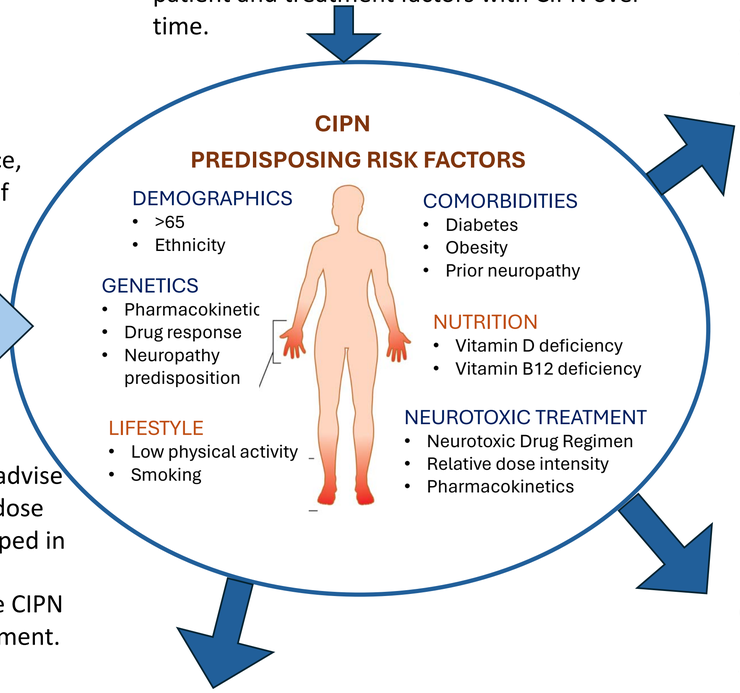
Predisposing risk factors for CIPN are inconsistently reported between studies. A total dose of Oxaliplatin is a treatment related factor that has consistently associated with increased neurotoxicity,. However, despite lower doses a proportion of patients still experience CIPN.

Background

The American Society of Clinical Oncology CIPN guidelines[2] advise that clinicians assess CIPN symptoms and recommend that dose reductions, dose delays, substitutions and treatment is stopped in patients with severe acute CIPN to reduce long term CIPN symptoms. Despite dose reductions some people with acute CIPN still go on to experience CIPN as a late effect of cancer treatment.

Research objective

Our aim was to investigate the relationship of patient and treatment factors with CIPN over time.



Methods

This study was a secondary analysis of data from the SCOT international study which compared 3 to 6 months of oxaliplatin-containing adjuvant chemotherapy (FOLFOX or CAPOX) in 6088 people with stage II or III colorectal cancer recruited between March 2008 and 2013[4]. We carried out an analysis of FACT/GOG-NTX-4 patient reported outcome neuropathy scores and their associated demographic factors and treatment data in 2871 participants from baseline, mapping CIPN trajectory, up to 6 years out of the 8 years of the data collected in the trial (increased missing data over time)[3].

Results

Demographic factors such as age, sex or BMI were not statistically associated with severity of CIPN. Acute CIPN was associated with chronic symptoms. Baseline peripheral neuropathy ≥1 on FACT/GOG-NTX-4 significantly affected treatment related neuropathy scores over time. Peripheral neuropathy at baseline was associated with neuropathy both pre, during and after treatment (P<0.001) and at all time points except 18 months (*Figure 1.*)

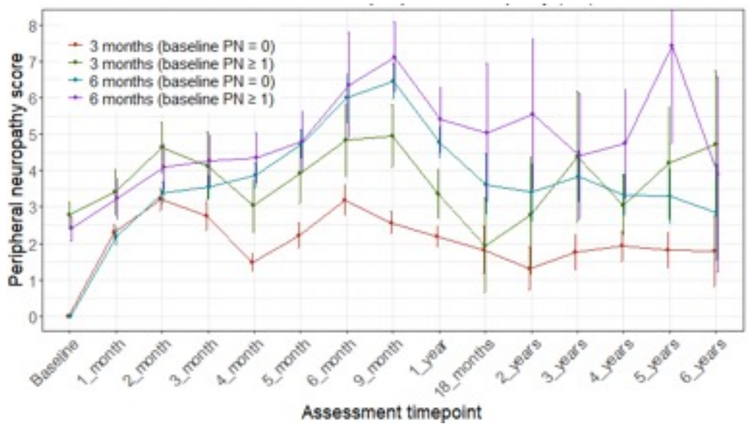


Figure 1. Longitudinal trajectory of CIPN. FACT/ GOG-NTX-4 baseline neuropathy scores (PN≥1 compared to PN=0) and treatment randomisation over time.

Despite similar cumulative doses of Oxaliplatin, differences in CIPN were observed between chemotherapy regimens of CAPOX and FOLFOX. Adjusted ANCOVA coefficient for those receiving CAPOX at 6 months was -1.6 (95%Cis—2.2 to -0.9) and at 2 years CIPN continued to be -1.6 (95% Cis -2.55 to-0.7) lower compared to those who received FOLFOX regimen.

Conclusion

Neuropathy detected at baseline was clearly associated with higher levels of CIPN during and after therapy. Clinical utility would be to use a short PROM assessment such as FACT/GOG-NTX-4 pre-treatment which may help inform shared decision making and preventative strategies such as which chemotherapy regimen or dosage is less neurotoxic.

References: [1]Bonhof CS, van de Poll-Franse IV et al. The course of peripheral neuropathy and its association with health-related quality of life among colorectal cancer patients. *J Cancer Surviv*. 2021;15 (2) 190-200; [2] Loprinzi CL, Lacchetti C et al. Prevention and management of chemotherapy –induced peripheral neuropathy in survivors of adult cancers: ASCO guidelines update, *J Clin Oncol* 2020, 38 3325-3348; [3]Lemanska A, Harkin A et al, The association of clinical and patient factors with chemotherapy-induced peripheral neuropathy (CIPN) in colorectal cancer: secondary analysis of the SCOT trial, *ESMO Open* 2023, 8, 6, doi.or/10.1016/j.esmoop.2023.102063