

CHEMOTHERAPY-INDUCED PERIPHERAL NEUROPATHY

**LONG-TERM OUTCOMES OF PACLITAXEL-
INDUCED PERIPHERAL NEUROPATHY FOR
CANCER SURVIVORS**



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>> IN FOCUS

2018
28-30 JUNE
VIENNA

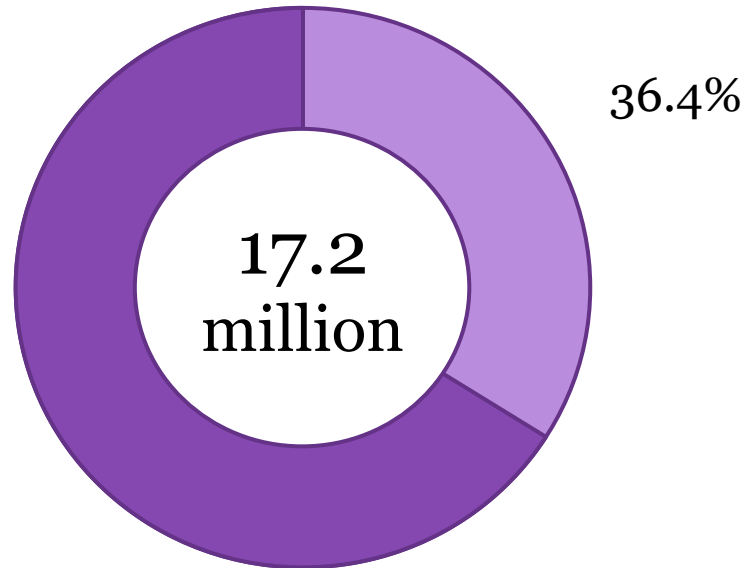
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Faculty Disclosure

<input checked="" type="checkbox"/>	No, nothing to disclose
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Breast Cancer Survival for Women



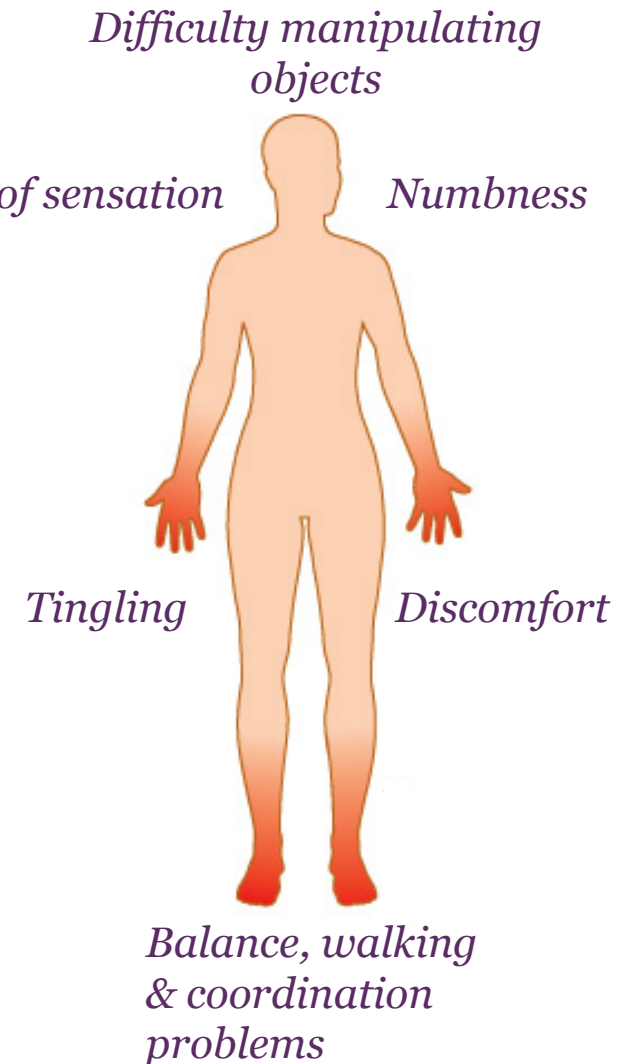
canceratlas.cancer.org

- Breast cancer is commonly treated with taxanes including paclitaxel
- Peripheral neuropathy is a common complication of paclitaxel treatment
- Paclitaxel-induced peripheral neuropathy (PIPN) may impact a large proportion of breast cancer survivors.

Paclitaxel-induced peripheral neuropathy

- Reduces treatment tolerability & produces long-term deficits
- No effective neuroprotection
- Mechanisms of neurotoxicity are poorly understood
- No method to identify at-risk patients
- Quantitative and functionally relevant assessment tools are lacking

Aim: To examine long term neurological deficits using objective clinical assessments and patient reported outcomes (PROs).



Assessment package

Patient reported outcomes

- Functional Assessment of Cancer Therapy/Gynecologic Oncology Group - Neurotoxicity questionnaire (Fact/GOG-Ntx)
 - Validated for use in CIPN
 - Increasing uptake in clinical trials

Neurological examination

- The Total Neuropathy Score (TNS)
 - Composite grading measure of symptom report and objective neurological assessment comprising of pinprick, vibration-sensibility, power and tendon reflexes.

Neurophysiology assessment

- Compound sensory action potentials (CSAPs) recorded from the median nerve.

FACT/GOG-NTX (Version 4)

Please circle or mark one number per line to indicate your response as it applies to the past 7 days.

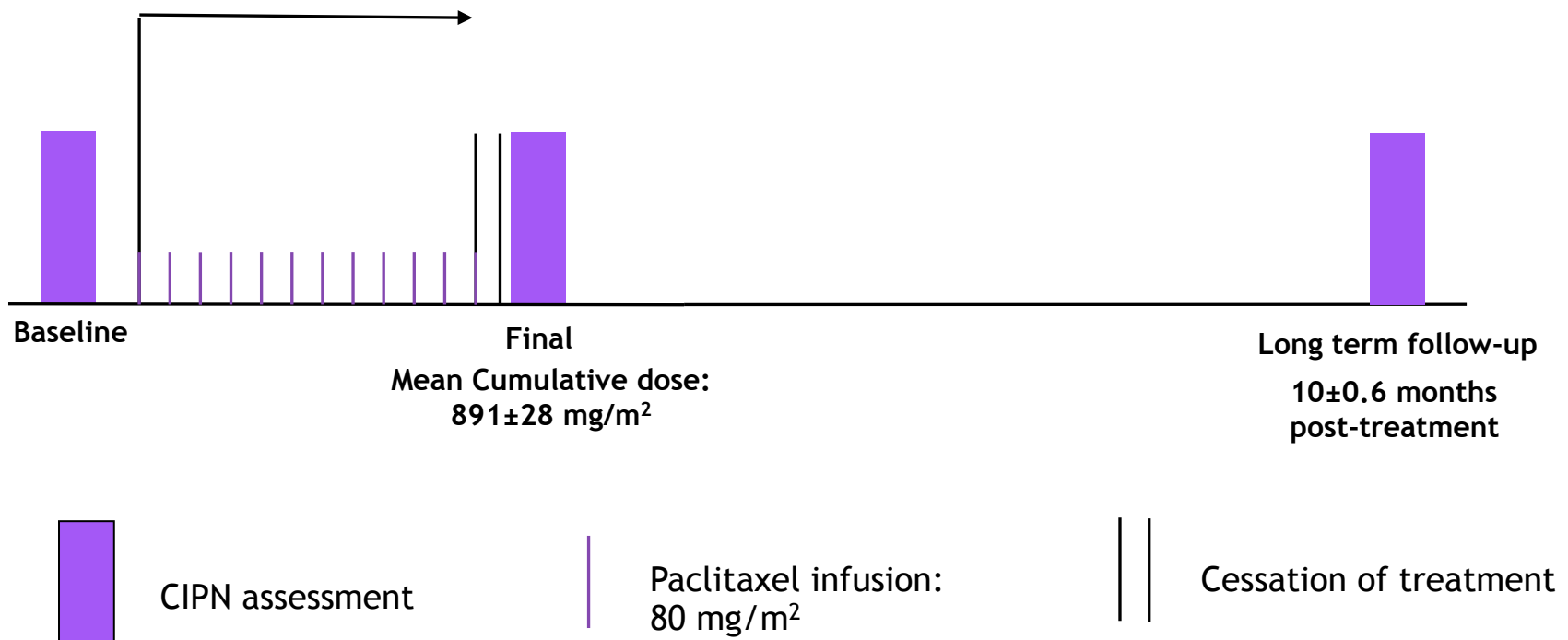
	Not at all	A little bit	Some-what	Quite a bit	Very much
ADDITIONAL CONCERNS					
1723 I have numbness or tingling in my hands.....	0	1	2	3	4
1723 I have numbness or tingling in my feet.....	0	1	2	3	4
1723 I feel discomfort in my hands.....	0	1	2	3	4
1723 I feel discomfort in my feet.....	0	1	2	3	4
1723 I have joint pain or muscle cramps.....	0	1	2	3	4
402 I feel weak all over.....	0	1	2	3	4
1723 I have trouble hearing.....	0	1	2	3	4
1723 I get a ringing or buzzing in my ears.....	0	1	2	3	4
1723 I have trouble buttoning buttons.....	0	1	2	3	4
1723 I have trouble feeling the shape of small objects when they are in my hand.....	0	1	2	3	4
402 I have trouble walking.....	0	1	2	3	4



Patient group

- 22 females diagnosed with breast cancer (mean age: 48 ± 3.8 years)
- Weekly paclitaxel for 12 weeks: 80 mg/m^2

Ongoing chemotherapy treatment



Neuropathy Status

At final treatment: Patient-reported symptoms

- 85% reported numbness and tingling in the hands and feet
- 45% reporting 'quite a bit' or 'very much'
- Reports of difficulty walking and reduced tactile sensation for 25%



Neuropathy Status

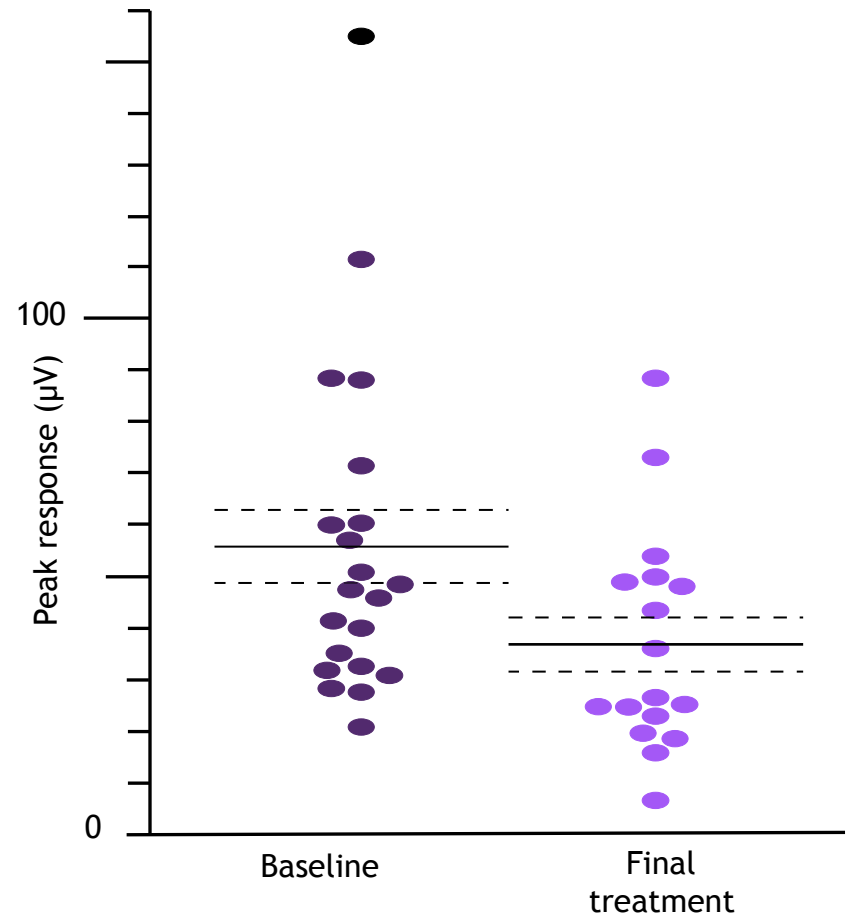
At final treatment: Objective neuropathy assessment

- On neurological examination 80% presented with two or more abnormalities
 - Reduction in tendon reflexes and pin prick sensibility most common



- Increase in objective neuropathy scores (TNSc: 1.1 ± 0.3 ; 4.6 ± 0.4 , $p < .05$)

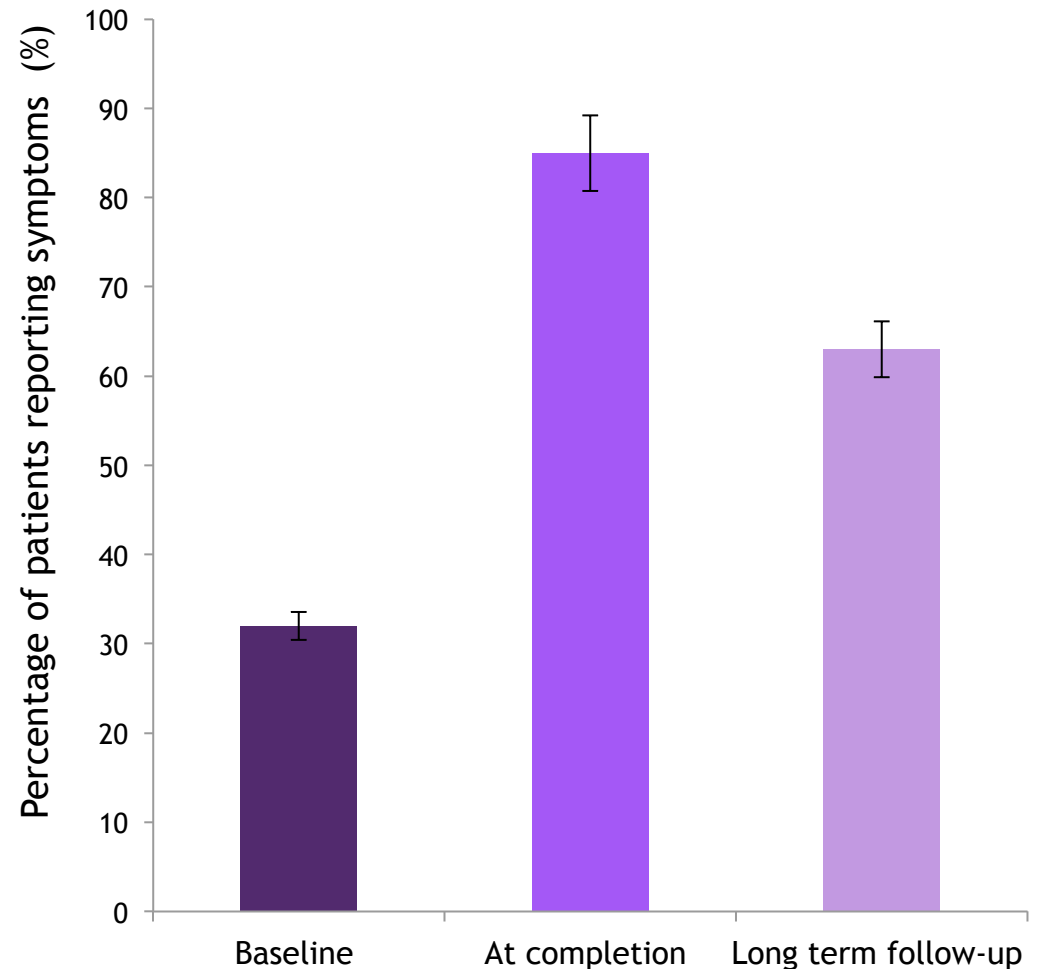
- Reduction in peak sensory amplitudes ($p < .05$), suggestive of axonal dysfunction



Neuropathy Status

At Long term follow-up (10±0.6 months): Patient-reported symptoms

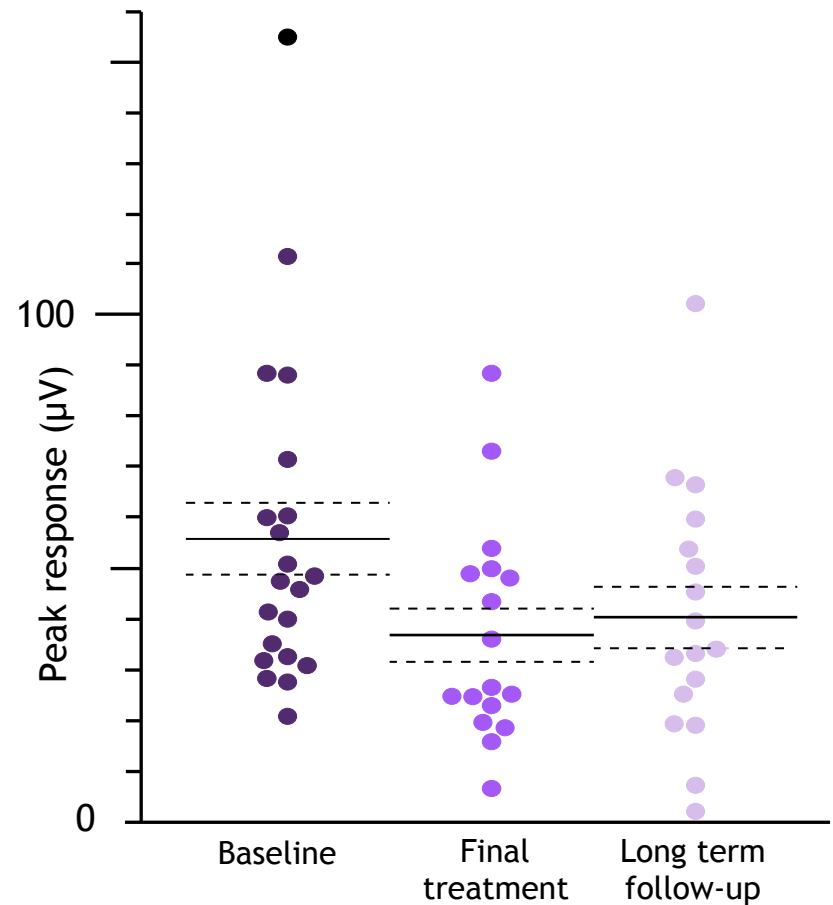
- Fewer patients reported numbness and tingling compared to final treatment ($p < .05$)
- Residual symptoms remained in 63% of patients
- As did deficits in walking (27%) and reduced tactile sensation (14%)



Neuropathy Status

At Long term follow-up (10 ± 0.6 months): Objective neuropathy assessment

- No significant improvement in neurological examination (TNSc: 4.6 ± 0.4 ; 3.1 ± 0.5 , $p = .97$), or neurophysiological parameters ($p = .92$) compared to final treatment



Conclusion

- Patients report significant symptoms of PIPN post-paclitaxel treatment, which persists long term and impacts on function
- Discrepancies between the level of objective and patient-reported neuropathy exist
- Consistent reductions in neurophysiological measures suggest higher sensitivity to nerve dysfunction compared to PROs, but may lack insight into the impact of PIPN on patients
- Incorporating objective measures and PROs will better inform treatment strategies to improve long-term quality of life in breast cancer survivors.

Acknowledgements

- Patients & Volunteers
- Tiffany Li
- Keith Cox, Michelle Harrison, Lisa Horvath, David Goldstein
- Matthew Kiernan, Susanna Park
- Cancer Institute NSW, National Health and Medical Research Council