Patients With Chemotherapy-Induced Peripheral Neuropathy Experience Pain Reduction in a Pilot Study of Oncology Massage Treatment

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Expert Perspective

“Chemotherapy-induced peripheral neuropathy (CIPN) is one of the most distressing and enduring side effects of cancer therapy and can have a significant impact on quality of life,” said Joseph Rotella, MD, MBA, HMDC, FAAHPM, 2019 Supportive Care in Oncology Symposium News Planning Team member. “Finding evidence to support complementary therapies, such as massage therapy, is imperative as we look for ways to improve quality of life from treatment through survivorship. This study provides important results that can help inform future studies to further validate the role of oncology massage therapy for CIPN.”

ALEXANDRIA, Va. – A new study finds that oncology massage therapy can provide symptomatic relief for a common and difficult to treat side effect of cancer treatment. Patients with chemotherapy-induced peripheral neuropathy (CIPN) experience a sustained reduction in lower extremity pain up to six weeks after completion of massage treatment when they received an intensive therapy schedule of three massages per week. These findings will be presented at the upcoming 2019 Supportive Care in Oncology Symposium in San Francisco, CA.

“Chemotherapy-induced peripheral neuropathy can be a challenging symptom to manage. This study builds upon integrative oncology methods to improve the quality of life for cancer survivors,” said study author, Gabriel Lopez, MD, Associate Professor and Medical Director of the Integrative Medicine Center at the University of Texas, M.D. Anderson Cancer Center in the Department of Palliative, Rehabilitation, & Integrative Medicine. “These findings introduce oncology massage as an additional option to help with symptom control and offer new insight into which massage
treatment schedule may provide patients with the greatest benefit."

Peripheral neuropathy is defined as damage to the peripheral nervous system—all nerves outside of the brain and spinal cord that carry messages to muscles, skin, and internal organs—that results in pain, numbness, tingling, and sensitivity to cold in the hands and/or feet. CIPN is specifically caused by chemotherapy drugs that can damage nerves, especially when used in high doses or over prolonged periods of time. The condition may be progressive, enduring, and irreversible.

This pilot study investigated important questions about massage dosing, including length of time of each massage session (30 minutes) and total number (up to 12) and frequency of treatments (2 versus 3 times per week). In addition to a treatment group where the affected lower extremities were treated with a standardized massage protocol, the study also included a control group where an area uninvolved by neuropathy was treated. The protocol included use of a Swedish massage technique, as compared to Shiatsu, Deep Tissue or other massage techniques, delivered by two oncology massage therapists – massage therapists who have expertise in working with cancer patients.

**About the Study**

Symptoms of CIPN were measured with the Pain Quality Assessment Scale (PQAS). This scale ranges from 0 to 10 with subscales of surface pain, deep pain, and paroxysmal pain. Participants were assessed at baseline, end of treatment (4 versus 6 weeks depending on treatment group) and again at end of study (10 weeks).

This study included patients 18 years or older experiencing lower extremity neuropathy attributed to oxaliplatin, paclitaxel, or docetaxel with no other history of attributable causes such as history of diabetes. As part of criteria for inclusion in this study, patients baseline self-reported neuropathy score had to be greater than or equal to three on a 10-point scale where 10 is the worst possible and must have had at least six months or more pass since their last chemotherapy treatment.

The Primary Aim was to compare completion rates of two massage treatment protocols (twice weekly for 6 weeks versus three times weekly for 4 weeks). Secondary Aims included an exploration of initial treatment efficacy.

Patients were randomized to one of four groups, two treatment groups (lower extremity massage twice weekly for 6 weeks versus three times weekly for 4 weeks) and two control groups (head/neck/shoulder massage twice weekly for 6 weeks versus three times weekly for 4 weeks).

**Key Findings**

The final assessment included 71 patients. Of these, the average length of time since their last
neurotoxic chemotherapy treatment was greater than three years.

Regarding the primary aim, mean massage completion rates were 8.9 sessions for those receiving massages three times per week and 9.8 sessions for those receiving massages two times per week with no statistical differences.

Exploring the secondary aim (initial efficacy), those who had massage three times per week (3X) reported statistically and clinically significant improvement in PQAS pain scores versus those who had massage two times per week (2X). Sustained improvement was observed at 10 weeks (end of study) in the 3X per week group.

- PQAS-Surface Pain: 2.3-point reduction for 3X vs. 0.6-point reduction for 2X (p = 0.001)
- PQAS-Deep Pain: 2.1-point reduction for 3X vs. 0.9-point reduction for 2X (p = 0.008)
- PQAS-Paroxysmal Pain: 2.3-point reduction for 3X vs. 1.0-point reduction for 2X (p = 0.025)

Next Steps

Now that this study has offered insight into questions about treatment schedule and initial efficacy, Dr. Lopez and his team plan to move forward with a large-scale efficacy study using the three times per week massage dosing schedule.

In addition to clinical studies exploring the role of oncology massage for symptom control, Dr. Lopez encourages researchers to ask questions about the mechanism behind how massage exerts its effects.

This year’s Supportive Care in Oncology Symposium will include approximately 150 abstracts focusing on efforts to improve supportive care for patients with cancer. On-site facilities for reporters will include a working newsroom and access to leading experts in supportive care.


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2019 Supportive Care in Oncology Symposium News Planning Team

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Abstract 111: A pilot study of oncology massage to treat chemotherapy-induced peripheral neuropathy (CIPN)

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Background: Short- and long-term toxicity of platinum compounds and taxanes includes development of CIPN. With an increased interest regarding the role of complementary approaches for symptom control, we investigated massage therapy for symptomatic relief of chronic CIPN.

Methods: This pilot study evaluated the optimum treatment schedule and initial efficacy of a
standardized Swedish massage technique to treat lower extremity (LE) CIPN. Inclusion criteria: LE neuropathy attributed to oxaliplatin, paclitaxel, or docetaxel, no other history of attributable causes; self-reported neuropathy score \( \geq 3 \), 0-10 scale; \( \geq 6 \) months since last chemotherapy treatment; age \( \geq 18 \). Patients (pts) were randomized to one of four groups: 1) LE massage 3 times (3X) week for 4 weeks; LE massage 2X week for 6 weeks; 3) head/neck/shoulder (control) massage 3X week for 4 weeks; or 4) control massage 2X week for 6 weeks. Massage completion rate was examined and symptoms of CIPN measured with the Pain Quality Assessment Scale [PQAS (Range: 0-10); subscales of SP (surface pain), DP (deep pain), and PP (paroxysmal pain)] at baseline and at 10 weeks. **Results:** 71 pts fulfilled inclusion criteria: 77.5% women; 57.7% (breast cancer), and 42.3% (GI cancer); mean age 60.3 y/o (range: 40-77). Average length of time since the end of chemotherapy was > 3 yrs. Mean massage completion rates (max = 12) were 8.9 (SD 4.2) for 3X week and 9.8 (4.0) for 2X week with no statistical differences. There were no statistically significant differences in PQAS scores at follow-up between site-specific massage groups (lower extremity vs controls). Pts who had massage 3X week reported statistically and clinically significantly improved PQAS scores versus those who had massage 2X week (change scores: PQAS-SP: -2.3 vs. -0.6, \( p = 0.001 \); PQAS-DP: -2.1 vs. -0.9, \( p = 0.008 \); PQAS-PP: -2.3 vs. -1.0, \( p = 0.025 \)), with sustained improvement in the 3X week group, but minimal change in the 2X week group. **Conclusions:** We observed sustained reduction in pts with long-term CIPN up to 6 weeks after treatment completion for the more intensive 3X week massage group, regardless of treatment site. A large-scale efficacy trial is warranted to validate the role of oncology massage therapy for CIPN.

**Disclosures:** Cathy Eng, MD, FACP, FASCO: Consulting or Advisory Role with Roche/Genentech, Bayer Schering Pharma, Taiho Pharmaceutical, and Terumo Clinical Supply, Travel, Accommodations, Expenses from Genentech/Roche, Bayer, Sirtex Medical, Honoraria from Roche and Bayer; Michael J. Overman, MD: Consulting or Advisory Role with Bristol-Myers Squibb, Roche/Genentech, Gritstone Oncology, MedImmune, Novartis, Promega, Spectrum Pharmaceuticals, Array BioPharma, Research Funding from Bristol-Myers Squibb, Merck, Roche and MedImmune; Eduardo Bruera, MD: Research Funding (Institutional) from Helsinn Healthcare; Lorenzo Cohen, PhD: Consulting or Advisory Role with Cancer Treatment Centers of America, Anhui China Resources Jinchan Pharmaceutical, Travel, Accommodations, Expenses from Teva, Honoraria from Teva.

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