

Neuropathies

OPR-070

Photobiomodulation in the management of chemotherapy-induced peripheral neuropathy: a randomized, controlled trial

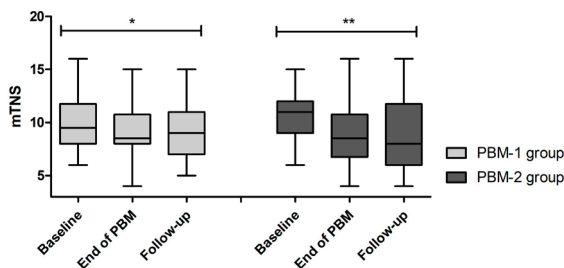
M. Claes¹, J. Lodewijckx¹, S. Hermans², P. Peeters³, J. Mebis⁴, J. Robijns¹

¹Faculty of Medicine and Life Sciences, Hasselt University, Hasselt, Belgium, ²Department of Neurology, Jessa Hospital, Hasselt, Belgium, ³Department of Gastroenterology, Jessa Hospital, Hasselt, Belgium, ⁴Department of Medical Oncology, Jessa Hospital, Hasselt, Belgium

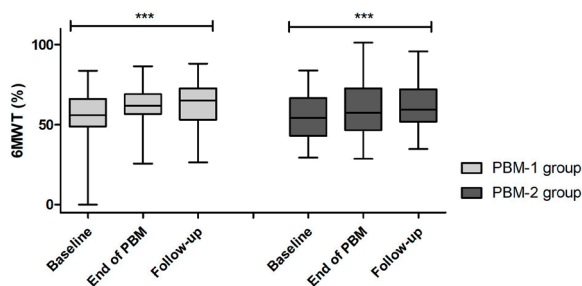
Background and aims: Cancer treatment is often accompanied by incapacitating side effects, such as chemotherapy-induced peripheral neuropathy (CIPN). CIPN limits the patients' quality of life and current therapeutic options lack effectiveness. Photobiomodulation (PBM) therapy uses (near)-infrared light to activate cell repair mechanisms and reduce pain and inflammation. Research has shown the efficiency of PBM in preventing CIPN. This trial aimed to evaluate the efficacy of PBM in treating CIPN while assessing the optimal PBM dosage.

Methods: A randomized controlled trial was conducted at the Jessa Hospital (Hasselt, Belgium). Sixty cancer patients, diagnosed with CIPN, were randomly allocated to the PBM-1 group (6 J/cm², n=28) or PBM-2 group (8 J/cm², n=32) and received PBM twice a week for three weeks. The severity of CIPN and the patients' mobility were assessed using the modified Total Neuropathy Score (mTNS) and the six-minute walk test (6MWT), respectively. Outcome measures were collected at baseline, the end of PBM, and three weeks post-PBM.

Results: The mTNS decreased significantly over time in both the PBM-1 and PBM-2 group (P=0.021 and P=0.007, respectively). Moreover, the mTNS remained constant between the end of PBM and the follow-up visit in both groups (Figure 1). Similarly, according to the 6MWT (Figure 2), the patients' mobility significantly improved over time in the PBM-1 and PBM-2 group (Ps<0.001).



Comparison of modified Total Neuropathy Score (mTNS) over time when treated with photobiomodulation (PBM). A higher score indicates a more severe grade of peripheral neuropathy. Significance is shown as *P<0.05, **P<0.01



Comparison of six-minute walk test (6MWT) distance over time. Percentages are calculated using reference standards based on the patients gender, age, and BMI, wherein a higher score indicates a better mobility. Significance is shown as *** P<0.001.

Conclusion: In conclusion, PBM reduces the symptoms associated with CIPN resulting in better mobility. No significant differences between groups could be detected based on the applied dosage. Further research is necessary to optimize the PBM treatment and irradiation parameters.

OPR-071

Unclassified clinical presentations of chronic inflammatory demyelinating polyradiculoneuropathy

P. Doneddu¹, H. Akyil¹, F. Manganelli², C. Briani³, D. Cocito⁴, A. Mazzeo⁵, R. Fazio⁷, M. Filosto⁸, G. Cosentino⁹, V. Di Stefano¹⁰, G. Antonini¹¹, G. Marfia¹², M. Inghilleri¹³, G. Siciliano¹⁴, A. Clerici¹⁵, M. Carpo¹⁶, A. Schenone¹⁷, M. Luigetti¹⁸, G. Lauria¹⁹, S. Matà²⁰, T. Rosso²¹, G. Minicuci²², M. Luchetta²³, E. Nobile-Orazio¹

¹Humanitas Clinical and Research Center, Milan, Italy, ²University of Naples 'Federico II', Napoli, Italy, ³University of Padova, Padova, Italy, ⁴Istituti Clinici Scientifici Maugeri, Torino, Italy, ⁵IRCCS Ospedale Policlinico San Martino, Genova, Italy, ⁶University of Messina, Messina, Italy, ⁷San Raffaele Scientific Institute, Milano, Italy, ⁸University of Brescia; NeMO-Brescia Clinical Center for Neuromuscular Diseases, Brescia, Italy, ⁹IRCCS Mondino Foundation, Pavia, Italy, ¹⁰University of Palermo, Palermo, Italy, ¹¹'Sapienza' University of Rome, Sant'Andrea Hospital, Rome, Italy, ¹²Tor Vergata University of Rome, Rome, Italy, ¹³'Sapienza' University of Rome, Rome, Italy, ¹⁴University of Pisa, Pisa, Italy, ¹⁵Insubria University, DBSV, Varese, Italy, ¹⁶ASST Bergamo Ovest-Ospedale Treviglio, Treviglio, Italy, ¹⁷University of Genova, Genova, Italy, ¹⁸Fondazione Policlinico Universitario Agostino Gemelli IRCCS. UOC Neurologia, Rome, Italy, ¹⁹IRCCS Foundation 'Carlo Besta' Neurological Institute, Milan, Italy, ²⁰Careggi University Hospital, Firenze, Italy, ²¹Ospedale San Bassiano, Bassano del Grappa, Vicenza, Italy, ²²Ospedale di Vicenza, Vicenza, Italy, ²³Ospedale Santa Maria della Misericordia, Rovigo, Italy