

December 06-07, 2018
Amsterdam, NetherlandsJ Neurol Neurosci 2018, Volume: 2
DOI: 10.21767/2471-8548-C1-003

PHOTOBIO-MODULATION: CASES OF HEALING ALZHEIMER'S DISEASE WITH LIGHT

Lew Lim

Vielight Inc., Canada

Photobiomodulation (PBM) has been overlooked as a potentially potent modality for a variety of medical conditions. It involves delivering light, mainly in the red and near infrared (NIR) spectrum to the body and brain to achieve positive health outcomes. Research on PBM's effect on the brain is just now making some headway in human studies, in particular in dementia and Alzheimer's disease (AD). An early study investigated whether a group of patients with mild to moderately-severe dementia or AD, MMSE baseline scores of 10-24, would improve when treated with NIR PBM therapy. The study used 810 nm; 10 Hz pulsed, light-emitting diode (LED) devices combining transcranial plus intranasal PBM to treat the cortical nodes of the default mode network (DMN). The home-use devices were considered as low risk general wellness devices, exempted from medical device regulations in North America. Five patients with mild to moderately-severe dementia or AD were entered into 12 weeks of active treatment as well as a no-treatment, 4-week period. Patients were assessed with the MMSE and ADAS-cog tests. The protocol involved weekly, in-clinic use of a transcranial-intranasal PBM device and daily at-home use of an intranasal-only device. The results presented significant improvement after 12 weeks of PBM (MMSE, $p < 0.003$; ADAS-cog, $p < 0.03$). Increased function, better sleep, fewer angry outbursts, less anxiety and wandering were reported post-PBM. There were no negative side effects. Precipitous declines were observed during the 4-week follow-up period of no treatment, suggesting that PBM treatment for AD has to be regular and permanent. This case series study is the first completed PBM pilot study to report significant, cognitive improvement in mild to moderately-severe dementia and AD cases. Results suggest that larger, controlled studies are warranted, which are now underway. PBM shows potential for home treatment of patients with dementia and AD.

lewlim@vielight.com