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Photobiomodulation therapy improves quality of life, wound healing and pain scores of Diabetic Patients from Brazilian Public Hospital**Camila Squarzoni Dale***University of Sao Paulo, Brazil*

Background: Diabetic Foot ulcers represents 40-70% of non-traumatic lower limb amputations with great socioeconomic impact and high morbidity and mortality and losses on quality of life. Conventional treatments are restricted, painful and usually ineffective. Photobiomodulation (PBM) is a low-cost therapy which promotes analgesia and tissue repair in diabetic patients (DP).

Aim: Evaluate PBM-effect on wound healing, pain and quality of life of DP from the University Hospital of USP/BR. Methods: transversal and interventional study including 14 DP submitted to clinical evaluation, pain (BPI, DN4 and McGill), quality of life (HADS and PCS) screening before, immediately after and 6 months after 14 applications of PBM therapy (660 nm, 1.4 J, 2x/week).

Results: Most of DP presented foot sensitivity and history of amputation. 42.8% of DP presented wounds >12 months with lower limbs symptoms as numbness (57.1%), burning (63.3%) and tingling (57.1%) with worsening of symptoms at night (57.1%). After PBM, total or partial wound retraction ($p=0.001$) were obtained, with permanent recovery in 71.4% of DP even after 6 months. A decrease in pain impact were observed (41%, $p=0.050$), improving patient's social relationships ($p=0.068$), added to significant reduction in neuropathic pain scores ($p=0.031$) and albeit not significant, PBM slightly improved emotional aspects of DP. Wilcoxon test ($p<0.05$, SPSS).

Conclusion: PBM therapy promoted significative and permanent wound retraction and improved quality of life and pain screening of DP, reinforcing the use of this adjuvant tool in the clinical treatment of painful symptoms and in the wound healing process of DP.

Keywords: photobiomodulation; low level laser; diabetic neuropathy, wound healing

Biography

I am an Associate Professor at the Department of Anatomy of the University of São Paulo working mostly on the effects of complimentary therapies for pain treatment. In this aspect we have been working on the effects and mechanisms involved on the analgesia induced by photobiomodulation in experimental models of dental hypersensitivity and also we have been working on an experimental model of diabetic neuropathy that was recently published at J Biophotonics. 2018; this data supported the use of photobiomodulation on diabetic patients so now we are working on a project that evaluates the effects and mechanisms involved on photobiomodulation-induced analgesia in those patients. Moreover, to work on human subjects lead us to develop another project that aims to understand the different pain pattern of neuropathic pain-diabetic patients, through exteroceptive evaluation using quantitative sensory testing.