

The Effect of Low Level Laser Therapy in Different Wavelengths in the Treatment of Oral Mucositis—Proposal for Extra-Oral Implementation¹

J. J. C. Moraes^{a,*}, A. S. Queiroga^b, R. C. C. G. De Biase^c, E. P. Leite^d,
C. R. Cabral Júnior^e, and F. A. Limeira Júnior^{f,**}

^a Student of the Estomatopatologia Pos-graduation Program, Piracicaba Dental School, State University of Campinas, Piracicaba, SP, Brazil

^b Integrated UFPB/UFBA Posgraduate Dental Program, School of Dentistry, Federal University of Paraíba, João Pessoa, PB, Brazil

^c Department of Clinic and Social Odontology, Dental School, Federal University of Paraíba, João Pessoa, PB, Brazil

^d Children Oncohematology Center, Oswaldo Cruz University Hospital, University of Pernambuco, Recife, PE, Brazil

^e Statistics Department, Federal University of Alagoas, Maceió, AL, Brazil

^f PhD in Laser in Dentistry, Morphology Department, Health Science Center, Federal University of Paraíba, João Pessoa, PB, Brazil

*e-mail: juliannajoannamoraes@gmail.com

**e-mail: limeirajunior@gmail.com

Received March 9, 2009; in final form, March 25, 2009

Abstract—The oral mucositis is the most frequent acute oral complication resulting from antineoplastic treatment and may worsen the clinical condition of the patient and interfere with his/her quality of life. This study aimed to comparatively evaluate, from a clinical point of view, the effect of Laser Therapy $\lambda 660$ nm (wavelength of the red Laser) and $\lambda 830$ nm (wavelength of the infrared Laser), at extra-oral points, in remission of severity of oral mucositis and pain associated with it in pediatric oncological patients undergoing chemotherapy with the anticancer drug methotrexate, noting which of the two wavelength is the most appropriate to this new technique. The sample consisted of 13 patients placed at random in each group and subjected to sessions of Low Level Laser Therapy, at pre-determined extra-oral points for five consecutive days, starting at the beginning of the observation of mucositis injuries. It became possible to note that from the group of patients in the group of Laser $\lambda 830$ nm ($n = 6$; 46.15%), four ($n = 4$; 66.67%) of these patients had remission of injuries to grade 0 (WHO), and as for pain, five patients ($n = 5$; 83.33%) showed no painful symptoms for mucositis injuries. In the Laser $\lambda 660$ nm group ($n = 7$; 53.85%), only two patients ($n = 2$; 28.57%) achieved a regression of lesions to grade 0 (WHO), while four patients ($n = 4$; 57.14%) had no pain. So, the extra-oral application of Laser Therapy was effective in treating injuries of oral mucositis in the patients treated; and Laser Therapy in the infrared spectrum ($\lambda 830$ nm) was more effective in the treatment of oral mucositis injuries compared to the red spectrum ($\lambda 660$ nm), which can be explained by the greater power of penetration of infrared rays, acting in a more expressive way in deeper places.

PACS numbers: 42.62.Be, 87.50.Wp, 87.55.-x

DOI: 10.1134/S1054660X09170150