Low level laser therapy in patients with burning mouth syndrome: a single blind placebo controlled trial

M. Garrone, A. Gambino, M. Carbone, P. G. Arduino, R. Broccoletti
Department of Surgical Sciences, Oral Medicine Section, CIR-Dental School, University of Turin, Italy

Objectives. The purpose of this study was to evaluate the effectiveness of Low Level Laser Therapy (LLLT) in patients with burning mouth syndrome (BMS) and verify if the benefits on symptoms are due to placebo therapy. A further comparison of efficacy was performed with pharmacological therapy (topical clonazepam).
Methods. The patients were divided into three therapeutic groups. The first group received LLLT with a diode laser (980 nm, 10 Joules/cm^2, 0.3 W). The second group received a placebo laser treatment. The third group was treated topically with clonazepam for twenty-one days. The effectiveness in reducing symptoms was evaluated by compiling the VAS (Visual Analogue Scale) scale, the McGill pain questionnaire, the PPI (Present Pain Intensity), the OHIP-49 (Oral Health Impact Profile). Moreover, the HADS (Hospital Anxiety and Depression Scale) and GDS (Geriatric Depression Scale) questionnaires evaluated the efficay of the treatment proposed regarding the anxiety-depression profile.
Results. Forty-one patients were finally analyzed (mean age 66.29 years). During the follow-up of three months, we reported a significant improvement in pain reduction (88.2% in the laser group and 83.3% in the placebo laser group, without a statistical significant difference); however, only the 58.3% of patients treated with clonazepam reported an improvement. In these patients, the improvement is significant at the end of therapy. None of the treatments significantly influenced the anxious-depressive components.
Conclusions. LLLT improves symptoms of patients with burning mouth syndrome since the first application. LLLT seems to offer higher and more consistent therapeutic results compared to topical therapy with clonazepam.

References

- Dos Santos Ide F, Carvalho Ade A, Leão JC, Cruz Perez De Castro JF. Effect of low-level laser therapy in the treatment of burning mouth syndrome: a case series. Photomed laser surg. 2011;29(12):793-6.
- Kato IT, et al. Low-level laser therapy in burning mouth syndrome patients: a pilot study. Photomedicine and laser surgery. 2010;6:835-839.
- Yang, et al. Treatment of burning mouth syndrome with a low-level energy diode laser. Photomedicine and laser surgery. 2010;00:1-4.

Salivary proteomic biomarkers of oral squamous cell carcinoma

G. Giannatempo[1], L. Lo Russo[1], G. Campisi[2], C. Gallo[1], L. Lo Muzio[1]
[1]Department of Clinical and Experimental Medicine, University of Foggia, Italy; [2]Department of Surgical, Oncological and Oral Sciences, University of Palermo, Italy

Objectives. The aim of the present study is to investigate the presence of proteomic signatures of Oral Squamous Cell Carcinoma (OSCC) in saliva and their use as potential biomarkers for early and non-invasive diagnosis, as well as prognostication.
Methods. Saliva from 45 OSCC patients and 30 healthy controls was analysed by SELDI-TOF mass spectrometry and ProteinChip® technology. Proteomic profiles were tested with differential expression analysis and fold change of protein peaks, principal component analysis, Spearman rank correlation test and hierarchical clustering in order to identify a list of peaks of interest representative of controls, N- and N+ cases. Those peaks were used in a supervised artificial neural network in order to classify samples according to the following conditions: controls *vs* OSCC, controls *vs* N-, and controls *vs* N+.
Results. When compared with controls, four peaks (i.e. 6913, 11948, 13287 and 27280 m/z) were significantly altered in both N- group and N+ group; four peaks (i.e. 3353, 3433, 3482 and 4136 m/z) were selectively altered in N- group; eight peaks were selectively altered in N+ group (i.e. 4038, 7133, 11755, 13746, 13841, 14264, 16807, 17127 m/z). Those peaks were capable to classify 100% of cases and controls, thus being potential diagnostic and prognostic biomarkers for OSCC.

Conclusions. Proteomic profiling of saliva has the potential to provide an effective tool for early diagnosis and prognostication of OSCC.

References

- Fabian TK, Fejerdy P, Csermely P. Salivary Genomics, Transcriptomics and Proteomics: The Emerging Concept of the Oral Ecosystem and their Use in the Early Diagnosis of Cancer and other Diseases. Curr Genomics. 2008;9(1):11-21.
- Issaq HJ, Veenstra TD, Conrads TP, Felschow D. The SELDI-TOF MS approach to proteomics: protein profiling and biomarker identification. Biochem Biophys Res Commun. 2002;292(3):587-92.
- Lo Russo L, Papale M, Perrone D, Ranieri E, Rubini C, Giannatempo G, et al. Salivary proteomic signatures of oral squamous cell carcinoma. European Journal of Inflammation. 2012 Nov 7;10(1):61-70.

Osteonecrosis of the jaw after adjuvant endocrine therapy plus alendronate in a breast cancer patient

F. Giancola[1], O. Di Fede[1], L. Lo Russo[2], L. Lo Muzio[2], G. Campisi[1]

[1]Department of Surgical, Oncological and Oral Sciences, University of Palermo, Italy; [2]Department of Surgical Sciences, University of Foggia, Italy

Background. Bisphosphonates-associated osteonecrosis of the jaws (BRONJ) is a serious complication, which has been defined by Bedogni et al. (1) as an adverse drug reaction consisting of progressive destruction and death of bone that affects the mandible and/or maxilla of patients exposed to the treatment with nitrogen-containing bisphosphonates (NBPs) in absence of a previous radiation treatment. Generally, IV NBPs have a strong association with BRONJ than oral NBPs as evidenced by the higher incidence of BRONJ (0-10%) in patients treated with IV drugs than in patients in oral therapy (<1%) (2).

Objectives. The aim of this study was to report a clinical case of BRONJ in an oncologic patient who has been treated with anastrozole and oral NBPs for secondary osteoporosis.

Case report. In February 2014 a 75-year-old woman was referred because of history of pain in the left posterior mandibular region and hypoesthesia/anesthesia of the homolateral inferior lip and chin. In the anamnesis, she had referred to be in therapy with alendronate since 2004, for a history of severe osteoporosis and, in multimodal chemotherapy and anastrazole since 2010 for a diagnosis of breast cancer. Furthermore, left lower molar extraction was performed on March 2013. Clinical examination revealed swelling of the extraoral soft tissue in the left emimandible; intraorally, the presence of a mucosal fistula on the left mandibular angle was identified. CT was performed and BRONJ diagnosis was defined with a stage 2A according to Bedogni et al. (1).

Conclusions. Administration of NBP is indicated to treat also osteoporosis anastrazole-induced in oncological patients, showing that patients with hormone receptor-positive early-stage breast cancer taking oral BP could represent a subset in which it would be useful to apply BRONJ prevention protocols.

References

1. Bedogni A, et al. Learning from experience. Proposal of a refined definition and staging system for bisphosphonate-related osteonecrosis of the jaw (BRONJ). Oral Dis. 2012. 18(6):621-3.
2. Sigua-Rodriguez EA, et al. Bisphosphonate-related osteonecrosis of the jaw: a review of the literature. Int J Dent. 2014;2014: 192320.

Tooth extractions in high-risk patients previously treated for osteonecrosis. Protocol supported by low level laser therapy

I. Giovannacci, E. Merigo, A. Sarraj, T. Simonazzi, P. Vescovi

Center of Oral Laser Surgery and Oral Medicine, Dental School. Department of Biomedical, Biotechnological and Translational Sciences, University of Parma, Italy

Objectives. Trauma during dental surgery is the main predisposing factor for Medication Related Osteonecrosis of the Jaws (MRONJ). Moreover, genetic factors are recognized in the pathogenesis. There are no specific guidelines for the management of tooth extractions in patients under Bisphosphonates Therapy (BPT).