

The efficacy of low-level laser therapy for the treatment of myogenous temporomandibular joint disorder

Farzaneh Ahrari & Azam S. Madani &
Zahra S. Ghafouri & Jan Tunér

Received: 19 September 2012 / Accepted: 18 December 2012
Springer-Verlag London 2013

Abstract Low-level laser therapy (LLLT) has been commonly used for the treatment of painful musculoskeletal conditions, but the results of previous studies on this subject are controversial. The aim of this study was to evaluate the efficacy of LLLT in the management of patients with myogenous temporomandibular joint disorders (TMDs). In this randomized, double-blind clinical trial, 20 patients with myogenous TMD were randomly divided into laser and placebo groups. In the laser group, a pulsed 810-nm low-level laser (average power 50 mW, peak power 80 W, 1,500 Hz, 120 s, 6 J, and 3.4 J/cm² per point) was used on painful muscles three times a week for 4 weeks. In the placebo group, the treatment was the same as that in the laser group, but without energy output. The patients were evaluated before laser therapy (T1), after six sessions of laser application (T2), at the end of treatment (T3), and 1 month after the last application (T4), and the level of pain and the amount of mouth opening were measured. There was a significant increase in mouth opening and a significant reduction of pain symptoms in the laser group ($p < 0.05$). A similar improvement was not observed in the placebo group ($p > 0.05$). Between-group comparisons revealed no significant difference in pain intensity and mouth opening measurement at any of the evaluation time points ($p > 0.05$). LLLT can

produce a significant improvement in pain level and mouth opening in patients affected with myogenous TMD.

F. Ahrari (*) · A. S. Madani (*)
Dental Research Center, School of Dentistry, Mashhad University
of Medical Sciences, Mashhad, Iran
e-mail: AhrariF@mums.ac.ir
e-mail: MadaniA@mums.ac.ir

F. Ahrari
e-mail: Farzaneh.Ahrari@gmail.com

Z. S. Ghafouri
Mashhad, Iran

J. Tunér
Grängesberg, Sweden

E