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Low-level laser therapy (LLLT) associated with aerobic plus resistance training to improve inflammatory biomarkers in obese adults

Raquel Munhoz da Silveira Campos [1], Ana Raimunda Dâmaso, Deborah Cristina Landi Masquio, Antonio Eduardo Aquino Jr, Marcela Sene-Fiorese, Fernanda Oliveira Duarte, Lian Tock, Nivaldo Antonio Parizotto, Vanderlei Salvador Bagnato

Affiliations + expand

PMID: 25958170 DOI: 10.1007/s10103-015-1759-9

Abstract

Recently, investigations suggest the benefits of low-level laser (light) therapy (LLLT) in noninvasive treatment of cellulite, improvement of body countering, and control of lipid profile. However, the underlying key mechanism for such potential effects associated to aerobic plus resistance training to reduce body fat and inflammatory process, related to obesity in women still unclear. The purpose of the present investigation was to evaluate the effects of combined therapy of LLLT and aerobic plus resistance training in inflammatory profile and body composition of obese women. For this study, it involved 40 obese women with age of 20-40 years. Inclusion criteria were primary obesity and body mass index (BMI) greater than 30 kg/m(2) and less than 40 kg/m(2). The voluntaries were allocated in two different groups: phototherapy group and SHAM group. The interventions consisted on physical exercise training and application of phototherapy (808 nm), immediately after the physical exercise, with special designed device. Proinflammatory/anti-inflammatory adipokines were measured. It was showed that LLLT associated to physical exercise is more effective than physical exercise alone to increase adiponectin concentration, an anti-inflammatory adipokine. Also, it showed reduced values of neck circumference (cm), insulin concentration (μU/ml), and interleukin-6 (pg/ml) in LLLT group. In conclusion, phototherapy can be an important tool in the obesity, mostly considering its potential effects associated to exercise training in attenuating inflammation in women, being these results applicable in the clinical practices to control related risk associated to obesity.

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