EFFECT OF LOW LEVEL LASER THERAPY ON PAIN LEVEL AFTER THIRD MOLAR SURGERY: A META-ANALYSIS

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ABSTRACT

Background: Low-level laser therapy is a form of light therapy that triggers biochemical changes within cells. Photons are absorbed by cellular photoreceptors, triggering chemical alterations and potential biochemical benefits to the human body. Low-level laser therapy has been used in pain management for years and is also known as cold laser therapy, which uses low-frequency continuous laser of typically 600 to 1,000 nm wavelength for pain reduction and healing stimulation. This study aimed to examine the effect of low level laser therapy on pain level after third molar surgery.

Subjects and Method: A systematic review and meta-analysis was conducted by collecting articles published from 2005 to 2021. Articles search source were PubMed, Science Direct, Springer Link, Google Scholar, and Chorange Library databases. The inclusion criteria were English full text and randomized controlled trial. Keywords used “Low level laser therapy” AND “Pain level” AND “Third molar surgery” AND “Randomized Controlled Trial”. The articles were filtered using PICO model, including: (1) Population= patient of third molar surgery aged 18-45 years, (2) intervention= low level laser therapy, (3) comparison= non low level laser therapy, and (4) outcome= pain. Quantitative data analysis was processed by calculating standardized mean difference using Review Manager (RevMan 5.3).

Results: 10 studies were involved for meta-analysis. The study showed that low level laser therapy was effective to lower pain in patients whose undergo third molar surgery (Standardized Mean Difference= -0.86; 95% CI= -1.19 to -0.53; p= 0.004). This study indicated that there was no publication bias between studies.

Conclusion: Low level laser therapy is effective to lower pain in patients whose undergo third molar surgery.

Keywords: low level laser therapy, pain, third molar surgery

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