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**Format:** Abstract

Photobiomodul Photomed Laser Surg. 2019 Oct 7. doi: 10.1089/photob.2019.4696. [Epub ahead of print]

Can Photobiomodulation Therapy Be an Alternative to Methylprednisolone in Reducing Pain, Swelling, and Trismus After Removal of Impacted Third Molars?

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Abstract

Background and objective: Studies investigating an alternative to corticosteroids in terms of potential side effects after **surgical** removal of impacted third molars are still ongoing. Accordingly, the present randomized single-blind study aimed to compare the efficacy of photobiomodulation **therapy** (PBMT) and methylprednisolone on pain, edema, and trismus after **surgical** removal of impacted third molars. **Methods:** The study included 30 healthy patients with bilaterally impacted lower third molars. The side (right or left molar) that would be extracted at first and the treatment (PBMT or corticosteroid) that would be applied to this side were decided by tossing a coin. The time interval between two **surgical** operations was at least 3 weeks. In the **laser** group, immediately after the **surgical** procedure, PBMT was applied extraorally to the insertion point of the masseter muscle for 60 sec with an output power of 0.3 W and an energy density of 6 J/cm² and then repeated on postoperative days 1 and 2. In the corticosteroid group, 40 mg/2 mL methylprednisolone sodium succinate was injected postoperatively into the masseter muscle with the intrabuccal approach. On postoperative day 1, methylprednisolone injection (20 mg/1 mL) was repeated. Pain was evaluated using the visual analog scale on postoperative days 1, 2, and 7. Edema (in mm) and trismus (in mm) were evaluated preoperatively and on postoperative days 2 and 7. **Results:** There were no significant differences between the PBMT and methylprednisolone administration in terms of postoperative pain, edema, and trismus. **Conclusions:** Within the limits of the present study, PBMT was considered an alternative and a useful method for controlling inflammatory complications following impacted wisdom tooth **surgery** as it exhibited similar clinical efficacy to that of methylprednisolone.

KEYWORDS: corticosteroid; methylprednisolone; pain; photobiomodulation **therapy**; swelling; trismus

PMID: 31589558 DOI: [10.1089/photob.2019.4696](https://doi.org/10.1089/photob.2019.4696)

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