

A Comparative Study of the Effectiveness of Immediate Versus Delayed Photobiomodulation Therapy in Reducing the Severity of Postoperative Inflammatory Complications

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Objective: The aim of this study was to compare the immediate versus the delayed application of photobiomodulation (PBM) therapy following odontectomy of horizontally impacted mandibular third molars, and assess which application method is more effective at reducing postoperative complications.

Background data: Surgical removal of horizontally impacted mandibular third molars is a common surgical procedure, usually associated with postoperative complications such as pain, swelling, and trismus. Several attempts have been made to minimize these complications. One such method is the use of PBM therapy.

Methods: Eighty patients with horizontally impacted mandibular third molars with no inferior alveolar canal approximation were recruited for this study. They were divided into two groups. The immediate group received PBM therapy immediately after surgery and on the 3rd day postoperatively. Subjects in the delayed group received PBM therapy on the 2nd and 4th days postoperatively. All subjects received 2 min of treatment using a 4 W laser beam, during which 171 J were delivered via a 2.8 cm² spot size. **Results:** Clinical and statistical results showed a significant reduction in pain, trismus, and swelling in the immediate PBM therapy group compared with the delayed PBM therapy group. **Conclusions:** Immediate PBM therapy is more effective than delayed PBM therapy in minimizing the complications associated with mandibular third molar removal surgery.