**Evaluation of the efficacy of photodynamic therapy in the treatment of pericoronitis: a randomized, controlled, double-blind clinical trial**

Tânia Oppido Schalch and Anna Carolina Ratto Tempestini Horliana

Nove de Julho University, BRA

**Abstract:**

Pericoronitis is a common disease in the eruption phase of third molars, sometimes debilitating. There is no consensus in the literature regarding a gold standard treatment. Studies using antimicrobial photodynamic therapy (aPDT) showed promising results of aPDT in the treatment of symptoms of pericoronitisis, which could be an interesting alternative therapy because is easy to perform and does not cause bacterial resistance. The aim of this study was to evaluate the effectiveness of a new formula of methylene blue (MB) in aPDT for pericoronitis. In this controlled trial, 10 individuals with pericoronitis were randomized into the positive control group (n = 5): irrigation with sterile saline and aPDT (conventional MB at 0.005% concentration and irradiation with low intensity laser λ = 660 nm , 9J per point and radiant exposure of 318 J/cm2), and the experimental group (n = 5): treatment identical to G1, however MB were delivered in a new formulation for oral use. Were analised the pain, edema and mounth opening. The variables were evaluated in baseline and 4th day after aPDT. Statistical analysis was performed with ANOVA two-way supplemented by the Bonferroni test. Significant values were p< 0.05. No statistical improvement in pain or swelling was observed in either group after treatments. In both groups there was a significant improvement in mouth opening, with a better result on the 4th day in favor of the experimental group. The results suggest that aPDT is an efficient therapy in the treatment of trismus caused by pericoronitis and that the new MB formula is more efficient than the conventional one for this purpose. Larger samples as well as new studies are needed for further conclusions.

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**Biography**

Tânia Oppido Schalch is a dentist, specialist in periodontology. Joined, in 2019, the Nove de Julho University as a Master´s student and in the end of 2020 obtained a Master's degree in Biophotonics applied to health sciences, collaborating in the development of many projects. In 2021 joined at the same program as a pHD student. Attended college at São Paulo University (USP), where she conducted, for 5years, researchs in the area of oral microbiology. Tânia has knowledge about lasertherapy, microbiology, periodontology and has experience with clinical and laboratorial researchs.

Email: [taniaschalch@gmail.com](mailto:taniaschalch@gmail.com)

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