

عنوان مقاله:

Antimicrobial Efficacy of Photodynamic Therapy and Light-Activated Disinfection Against Bacterial Species on Titanium Dental Implants

محل انتشار:

اولین کنگره دانشجویی دندانپزشکی شمال کشور (سال: 1398)

تعداد صفحات اصل مقاله: 1

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خلاصه مقاله:

Background and objective: The aim of this study was to evaluate the efficacy of photodynamic therapy (PDT) and light-activated disinfection (LAD) against three different bacterial species present on titanium dental implants. Peri-implantitis is an inflammatory process affecting the soft and hard tissue around an osseointegrated implant, resulting in the loss of supporting bone. Microorganisms living on the implant surface are considered to be the initial cause of peri-implantitis. The bacteria associated with peri-implantitis are very similar to advanced periodontitis, with most of them being spirochetes and nonmotile gram-negative bacteria such as *Aggregatibacter actinomycetemcomitans*, *Porphyromonas gingivalis*, *Prevotella intermedia*, *Tannerella forsythia*, *Treponema denticola*, etc. They adhere easily to the rough micro and macrostructure of dental implants, a property that makes debridement and decontamination of the implant surface difficult. **Materials and Methods:** The treatment of peri-implantitis is based on arresting the inflammatory process and the bone loss that occurs as a result of the disease. Since peri-implantitis is initiated and exacerbated by bacteria, The removal of these microbiota and their byproducts is thus essential for the treatment of peri-implantitis. Decontamination of the implant surfaces can be performed by mechanical methods (plastic curettes, ultrasonic scalers, air-powder abrasives, and ablative lasers) and chemical methods (citric acid, H₂O₂, chlorhexidine digluconate, and ethylenediaminetetraacetic acid [EDTA]), which are also associated with the use of local and systemic antibiotics. However, according to some studies, the total resolution of peri-implantitis could not be achieved using the aforementioned methods. **Findings:** The clinical efficacy of PDT as an adjunct treatment to conventional debridement techniques in the treatment of PI remains debatable. **Conclusion:** For understanding the effect of PDT further, in vitro and clinical studies should be performed to evaluate PDT. Treatment time, type of photosensitizer, and power of the light source should be further investigated so that a proper and effective treatment protocol can be established.

کلمات کلیدی:

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