

aPDT in eradication of *A. actinomycetemcomitans* by three different photosensitizers

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Introduction: Elimination of bacteria is a main goal in treatment of periodontitis. *Aggregatibacter actinomycetemcomitans* is considered as an important periodontal pathogen found particularly in aggressive periodontitis. The aim of this study was to compare the three different photosensitizers including Toluidine blue (TBO), Methylene blue (MB), indocyanine green (ICG) activated with appropriate wavelength against *A. actinomycetemcomitans*.

Materials & Methods: The anti-bacterial effect of anti-microbial photodynamic therapy (aPDT) against *A. actinomycetemcomitans* ATCC 33384 strain was determined at concentrations of 1.9-1000 µg/mL of ICG, 0.1-100 µg/mL of TBO and 0.1-100 µg/mL of MB activated by 808 nm, 635 nm and 660 nm, respectively.

Results: aPDT with all three photosensitizers with higher concentration showed significant reduction in *A. actinomycetemcomitans* growth when compared to the control group.

Conclusion: This new approach of using aPDT is less traumatic and quicker in the treatment of periodontal diseases. As a new approach, aPDT could be useful as an adjunct to conventional therapy.

Keywords: aPDT, *Aggregatibacter actinomycetemcomitans*, Periodontitis.