**Effect of antimicrobial photodynamic therapy on periodontopathogen - in vitro study**

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**Abstract:**

Periodontal disease is an inflammatory response to oral biofilm and the treatment consists of scaling and root planing. As an adjunct to this treatment, antimicrobial photodynamic therapy (aPDT) has been used and it consists of the use of photosensitizer (FS) and a light source for the formation of reactive oxygen species. Therefore, the aim of the study was to evaluate the use of aPDT in *Aggregatibacter actinomycentecomitans*, as well as the optimization of parameters.. For this*, A. actinomycentecomitans* (ATCC 29523) was used, cultivated in microaerophilia for 48 h. Then, the experiments were carried out in triplicate, with 6 groups: 1) Control, without intervention 2) Light, which was only irradiated 3) FS, where only FS was used 4) PDT1, which was performed aPDT with irradiation of 1min 5 ) PDT3, PDT with 3 min irradiation and 6) PDT5, PDT with 5 min irradiation. Methylene blue (Sigma – Aldrich, USA) was used as a dye at the final concentration of 100 µM and irradiated with laser λ = 660nm (Photon Lase lll, DMC, São Carlos, Brazil) with a power of 100mW and a radiant exposure of 215 J / cm2. After microbial growth, the cfu / mL count was performed and the mean and standard deviation were performed. The control, light and FS groups showed 1x109 cfu / mL and a microbial reduction of 7 orders of magnitude was achieved after 5 min of irradiation. It is concluded that aPDT was effective in microbial inactivation of *A. actinomycentecomitans* *in vitro*.

**Biography:**

Bianca Godoy-Miranda is graduated in Dentistry from Universidade Nove de Julho - UNINOVE. She was a monitor of the disciplines of Dental Materials ll and Periodontics I and ll, as well as advisor to the League of Human Anatomy Milton Picosse Head and Neck and vice president of the Loducca League of Maxillofacial Surgery and Traumatology. She was also a member of the group of Scientific Initiation in Biophotonics from 2014 to 2017. She was a special student of the Master in Biophotonics and participated in the program "Paths for the Master". She is currently a specialist at UNINOVE in Public Health with an emphasis on Family Health and a student of the Master's degree in Biophotonics.