**Photodynamic Therapy Efficiency and Scaling in Gingivitis Facilitated by the Use of Fixed Orthodontic Appliances: a Randomized Double-blind Controlled Clinical Trial**

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**Abstract:**

Corrective orthodontics is effective in recovering aesthetics and function; nonetheless, factors such as gingivitis contribute to its interruption. Orthodontic’s patients with gingivitis can be treated in the dental office with scraping; however, areas of gingival growth are difficult to access. Therefore, the aim of this study is to test the effectiveness of antimicrobial photodynamic therapy (aPDT) as an adjunct in decontamination of these areas. aPDT associates the use of a photosensitizer, light and oxygen to promote an antimicrobial effect. In this clinical, randomized and double blind trial, 34 participants in orthodontic treatment, presenting gingivitis and gingival growth will be included, divided into: 1.Control group- Ultrasound scraping + aPDT placebo and 2.Experimental group- Ultrasound scraping + aPDT. aPDT parameters will be: methylene blue 0.005%, λ = 660nm, 9J per site, irradiance = 3.5W/cm, radiant exposure = 318J/cm2. The analyzes will take place at baseline, 7 and 21 days after treatment. Clinical parameters will include gingival index, plaque index and probing depth. Crevicular fluid will be collected from 4 sites for analysis of IL-6 and IL-10 cytokines, by ELISA. The test for parametric data will be one-way ANOVA and for non-parametric Mann Whitney. Data will be presented by means ± SD and p defined at 0.05. The results of this study may present therapeutic alternatives. It is expected that there will be a decrease in IL-6 and an increase in IL-10, as well as an improvement in the clinical parameters of sites treated with aPDT and scaling.

Biography: Master and PhD student in Biophotonics Applied to Health Sciences - Nove de Julho University. Specialist in Orthodontics, NAP Odonto and DDS in Dentistry, UNINOVE. Interest in Biophotonics, Orthodontics and Periodontics.