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Immediate Results of Photodynamic Therapy for the Treatment of Halitosis in Adolescents: A Randomized, Controlled, Clinical Trial

Rubia Garcia Lopes [1], Ana Carolina Costa da Mota [1], Carolina Soares [2], Olinda Tarzia [2], Alessandro Melo Deana [1], Renato Araújo Prates [1], Cristiane Miranda França [1], Kristianne Porta Santos Fernandes [1], Raquel Agnelli Mesquita Ferrari [1], Sandra Kalil Bussadori [3]

Affiliations
PMID: 26510574 DOI: 10.1007/s10103-015-1822-6

Abstract

Light with or without chemical agents has been used to induce therapeutic and antimicrobial effects. With photodynamic therapy, the antimicrobial effect is confined to areas covered by a photosensitive dye and irradiated with light. The aim of the present study was to evaluate the effect of photodynamic therapy for the treatment of halitosis in adolescents through the analysis of volatile sulfur compounds, especially sulfide. A controlled, clinical trial was conducted with 45 adolescents randomly allocated to three groups: group 1, photodynamic therapy administered to the dorsum of the tongue; group 2, treatment with a tongue scraper; and group 3, treatment with a tongue scraper combined with photodynamic therapy. The diagnosis of halitosis was performed using gas chromatography before and after treatment. Comparisons were made using the Kruskal-Wallis test followed by the Student-Newman-Keuls test, with the level of significance set at 5 % ($p < 0.05$). After treatment, a statistically significant reduction in halitosis was found in all groups ($p < 0.001$). The greatest reduction in total sulfides (median = 0) occurred with the combination of tongue scraper and photodynamic therapy. The present study describes a novel option for the treatment of halitosis in adolescents with an immediate effect that does not involve the mechanical aggression of the lingual papillae that occurs with conventional treatment.

Trial registration: Photodynamic Therapy in Adolescents Halitosis (https://clinicaltrials.gov/ct2/show/NCT02007993?term=NCT02007993&rank=1)Number: NCT02007993FUNDING:FAPESPNumber: 2013/13032-8.

Keywords: Halitosis; Laser; Photodynamic therapy; Tongue.

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