

Short-term Clinical and Microbiological Effects of Halitosis Therapy

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The purpose of the present study was to evaluate the short-term clinical and microbiological effects of a protocol for the treatment of oral halitosis in patients suffering from this clinical condition. **Material & Methods.** 20 subjects complaining of oral malodor were included in this series. Patients with untreated periodontitis, recent tooth extraction, open caries lesions or intake of antibiotics in the previous month, were excluded. & hours before each evaluation, patients abstained from oral hygiene and ingestion of food and liquids. All subjects fulfilled a questionnaire about their oral health, smoking and dietary habits, and about their medical and dental history. At the baseline examination the following variables were recorded: full-mouth odor evaluated organoleptically (0-5); 2 consecutive measurements of VSC levels by means of Halimeter; and tongue coating Index (0-3). In a subset of 5 patients, standardized microbiological samples of unstimulated saliva and from the tongue dorsum were obtained for culture analysis (total aerobic and anaerobic counts, numbers and proportions of *P. gingivalis*, *P. intermedia*, *B. forsythus*, *L. nucleatum*, *P. micros.*, *C. rectus* and enterics). As part of the treatment protocol, patients received supragingival prophylaxis and instructions in oral hygiene including the use of dental floss and interproximal brushes according to individual needs: all were instructed to use a tongue scraper and to gargle with a mouth rinse containing chlorhexidine, cetylpyridinium chloride and zinc lactate (Halita), twice daily for a period of 4-6 weeks. Further dietary advice was provided according to specific requirements. 4-6 weeks after the treatment phase, the same variables were recorded again. Paired t-test was used to evaluate differences between visits. **Results & Discussion.** All malodor-related parameters were reduced at the post-treatment visit: the mean reduction \pm SD in the organoleptic scores were 1.7 \pm 10.91 ($p < 0.001$); in the VSC levels, 175 \pm 169 ppb ($p < 0.001$); and in the tongue coating index, 0.45 \pm 0.69 ($p < 0.05$). Regarding microbiological parameters, this treatment protocol was able to reduce total anaerobic counts in tongue samples in 2.34 $\times 10^6$ cfu ($p = 0.10$), while a clear pattern of reduction or increase was not observed in both aerobic or anaerobic counts in saliva, or in aerobic counts in tongue samples. *F. nucleatum* was detected in almost all tongue and saliva samples, both before and after treatment; while *P. gingivalis* occurrence was clearly reduced in saliva samples. **Conclusions.** The proposed treatment protocol was effective in controlling malodor-related parameters, after a period of active treatment of 4-6 weeks. The response of microbiological parameters in saliva and tongue samples remains to be elucidated.

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