

Oxygene® Works

Evaluation of Oxyfresh Toothpaste and Mouthwash regimen vs. Listerine

by Steven J. Spindler, D.D.S.* and Gregg A. Spindler**

Abstract

The relative clinical efficacy was compared between a sodium chlorite paste-mouthwash combination (test) regimen and a phenol-based mouthwash regimen (control) in a blind, crossover study. Twenty Class II or III periodontal patients were randomly assigned as test or control subjects. Parameter measurements of plaque score, gingival bleeding, gingival inflammation and pocket depth were recorded from the subjects at 0, 30 and 60 days following prophylaxis. The test group demonstrated significant improvements with all measured parameters except pocket depth when compared with controls. The mean bleeding scores in the test and control groups were 0.727 and 0.750 respectively. At 60 days the mean bleeding score was reduced to .427 in the control group and was 0.105 in the test group. The mean gingival index scores were reduced from 1.105 and 0.911 at baseline in the test and the control group to 0.561 and 0.733 respectively at 60 days. The mean plaque scores were reduced from 1.344 to .766 in the test group as compared to 1.327 to 1.055 in the control group. Probing depths were only slightly affected that the sodium chlorite paste-mouthwash combination may have a greater efficacy than the phenol-related mouthwash regimen in improving three of four periodontal parameters measure over 60 days.

Summary

Periodontal researchers for years have sought an ideal plaque control agent. Ideally, the agent should be efficacious in reducing disease activity and have breath-freshening properties, which enhance usage compliance. In the last 15 years, only two compounds, chlorhexidine and triclosan, have been approved by The United States Food and Drug Administration for plaque and gingivitis. A phenol-related mouthwash formulation, which has also received acceptance from The American Dental Association for plaque and gingivitis, is widely commercially available and does not require a prescription. These compounds have also been used for the control of halitosis.

Volatile sulphur compounds released by gram negative anaerobic bacteria from within the periodontal pocket and the dorsum of the tongue have been isolated as principle dorants. Gas chromatography, has isolated hydrogen sulfide, methyl mercaptan and dimethyl sulfide in multiple mouth air samples from halitosis patients. Additionally, studies have shown that volatile sulphur compounds were significantly elevated in periodontitis patients.

Although widely used for halitosis, the efficacy of sodium chlorite has not been extensively reported in controlled studies. Numerous anecdotal reports using halimeters have shown

reductions in measurable volatile sulfur compounds. Chemically, sodium chlorite oxidizes both hydrogen sulfide and methyl mercaptan via an oxidation-reduction reaction. Therefore, in theory, because these compounds have been chemically reduced, halitosis improved by a quantitative reduction of organoleptic agents.

There have been isolated reports in the literature of improved periodontal parameters in gingivitis and periodontitis patients using sodium chlorite for the control of halitosis. One study reported that 67.42% of pockets in periodontal maintenance patients measuring 4 mm or more had a measurable depth reduction at the next recare appointment. The same group reported approximately a 72% reduction of bleeding upon probing in 239 refractory, bleeding pockets from one recare appoint to the next. Another study showed a 34.50% reduction in plaque scores when using a stabilized form of sodium chlorite as compared with controls when all other forms of oral hygiene were suspended.

The purpose of this study was to investigate the relative efficacy on plaque level, gingival index, bleeding upon probing and picket depth of Oxyfresh, a sodium chlorite toothpaste and mouthwash regimen as compare to Listerine toothpaste and Listerine Cool Mint Mouthwash, a widely commercially available, phenol-related regimen.

In conclusion, both the Oxyfresh toothpaste and mouthwash regimen and the Listerine regimen resulted in measurable clinical improvements with respect to gingival bleeding, gingival inflammation and plaque scores during the 60-day observation period. This data suggests that there may be significant periodontal benefits in using Oxyfresh with Oxygene[®], a sodium chlorite toothpaste and mouthwash regimen.

**Private Practice, Limited to Periodontics, Metairie, Louisiana.*

***SGS Statistical Consulting Services, Tucson, Arizona*

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