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A prospective experimental comparative study on the clinical and antimicrobial effects of chlorine dioxide based toothpaste and mouth rinse in periodontitis patients- A One Year Follow-up Study

The significant clinical and microbiological improvement in Group A subjects (chlorine dioxide based toothpaste and mouth rinse) support that the hypothesis that Sodium Chlorite (Stabilized chlorine dioxide) may acts as a strong ingredient to restrict the proliferation of sub gingival anaerobic microbiota via oxygenation and neutralization of toxins (Bacterial proteolytic enzymes) produces by the bacteria in the oral cavity.

The stabilized chlorine dioxide based products used in this study (Oxyfresh® Power Paste, and Oxyfresh® Power Rinse) also destroy the volatile sulfide compounds, which further reduce the triggering of gingival inflammation. The key benefits for these products also include non-staining, alcohol free, non-irritating and no taste alterations.

This study also revealed that the bactericidal activity of stabilized chlorine dioxide oral rinse (Oxyfresh®) has marked bactericidal effects against with pathogens of periodontitis, i.e. *Aa, Fn, Pg* and *Pi*. These results are consistent with previous studies evaluating a stabilized chlorine dioxide oral rinse against polymicrobial suspensions and biofilm environments. The zinc acetate with xylitol further prevents the colonization of initial plaque formation and removes halitosis causing volatile organic compounds and mechanism of the system that focus on the oxygenation of anaerobic environment and lead to disruption of the biofilm.

Conclusion: sodium chlorite based toothpaste and mouthrinse will be a true alternative for maintaining oral hygiene.