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Efficacy of Subgingival Ozone Irrigation for Management of Chronic Periodontitis – A Clinical, Microbiological and Biochemical study

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Abstract

Purpose: Ozone, both gaseous and aqueous forms, is gaining significance among the dental fraternity as a possible alternative oral antiseptic agent. It is strongly antimicrobial and does not induce microbial resistance. The purpose of the present study was to evaluate the efficacy of subgingival irrigation of ozonated water as an adjunct to scaling and root planing (SRP) compared to SRP alone in the management of mild to moderate periodontitis patients. **Methods and Material**: The study was a randomized controlled trial; sixty patients were allocated to two groups, the ozone group (test group) and the scaling group (control group). All patients were subjected to scaling and root planing (SRP) in a single visit followed by irrigation with ozone water in the test group and distilled water in the control group at baseline and 14 days. The clinical parameters of Gingival Index (GI), Plaque Index (PI), percentage of sites with bleeding on probing (BOP), probing depth (PD) and clinical attachment level (CAL), total microbiologic count, differential microbial count of Porphyromonasspp., Fusobacterium spp., Prevotella spp. &Veillonella spp., and biochemical parameter of total antioxidant capacity (TAOC) in gingival crevicular fluid (GCF) were recorded at baseline and after 6 weeks. **Results**: Statistically significant improvements in clinical, microbiological and biochemical parameters were observed in both groups following therapy. At 6 weeks it was observed that adjunctive ozone irrigation resulted in significant reductions in GI, BOP, CAL and total microbial count compared to scaling and adjunctive distilled water irrigation while the changes in PI and antioxidant levels did not reach statistical significance. **Conclusions**: The adjunctive use of subgingival irrigation ozonated water showed promising short-term results.