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Adjunctive Hyaluronic Acid Gel in Non-Surgical Treatment of Periodontitis

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Objectives: The present study was to evaluate the adjunctive effect of local delivery of hyaluronic acid (HA) gel in non-surgical treatment of chronic periodontitis. **Methods:** In a randomized double-blind clinical trial, 53 subjects with untreated chronic periodontitis (44.9 ± 9.6 years) were divided into two groups. In the test group, a HA gel (0.8%) was applied sub-gingivally four times in all sites with probing depth (PD) ≥ 4 mm, three weekly applications during non-surgical therapy and at one-week review afterwards. In the control group, a placebo gel was applied following the same protocol. Clinical parameters, including the presence of plaque (PI%), bleeding on probing (BOP%), PD and probing attachment level (PAL) were recorded at baseline and one month after final application of the HA gel. PD and PAL were measured using the Florida Probe by a calibrated examiner. Gingival crevicular fluid (GCF) samples were taken from the deepest site in each quadrant by paper strip technique. The GCF volume was immediately determined by a GCF meter Periotron 8000. **Results:** Both PI% and BOP% were significantly reduced in test ($p < 0.01$) and control groups ($p < 0.01$). There was marked reduction of PD and gain of attachment in both test and control groups and no statistically significant difference was found between the groups. Greater reduction of GCF volume was found in the test group ($0.30 \pm 0.47 \mu\text{l}$), compared to the control group ($0.15 \pm 0.36 \mu\text{l}$) ($p < 0.01$). **Conclusions:** This preliminary study suggests that local delivery of HA gel may have potential effect as an adjunct to non-surgical treatment of chronic periodontitis through reduction of GCF volume.

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