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Evaluation of interleukin-1 β level and oxidative status in gingival crevicular fluid during rapid maxillary expansion

The levels of interleukin-1 β (IL-1 β), nitric oxide (NO), total antioxidant capacity (TAC), and total oxidant status (TOS) in gingival crevicular fluid (GCF) were determined during rapid maxillary expansion (RME) treatment. Fourteen patients (10-13 years old) were included. A modified hyrax appliance was used for the treatment. After periodontal parameters were recorded, GCF was collected from the first molars at each observation [T1:baseline:14 days after periodontal prophylaxis and instructions; T2:1 day later hyrax inserted, at passive position; T3:1 week later; after the first activation; T4:after 2 \times 1/4 activation; T5:after 7 \times 1/4 activation; T6:after 14 \times 1/4 activation; T7:retention period on the 1st month; and T8:retention period on the 3rd

month]. Although the levels of IL-1 β , NO, and PD increased significantly from T1 to T2, the GI, BOP%, and PI remained unchanged throughout treatment. GCF volume at buccal and palatal surfaces increased significantly from T1 to T4, T6, T7, and T8. The parameters in GCF and TAC levels were not only higher at palatal side in comparison with buccal, but also TOS levels increased at both buccal and palatal sides. In this study, the differences of oxidative status and IL-1 β levels during RME treatment could be attributable to orthopedic effect of the heavy forces on maxilla and minimal orthodontic forces on teeth applied by the RME apparatus.

Biography

Nur Ozel does private practice in Izmir and is currently running as a clinician in Izmir Education Dental Hospital, Izmir/Turkey. She is a member of the Turkish Orthodontic Society and affiliate member of the American Dental Association. She has been a certified incognito System user since 2017. To date she has published 5 various articles in various journals in dentistry.

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