

Six-month follow-up of the effect of nonvital bleaching on IL-1b and RANK-L: A randomized clinical trial

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Objectives: It has been reported that bleaching generates an increase in the activity of osteoclasts in vitro. We quantified the RANK-L and IL-1b biomarkers in a double-blind, randomized clinical trial evaluating the in vivo effect of hydrogen peroxide (35%) and peroxide carbamide (37%) six months after whitening. **Methods and Materials:** Fifty volunteers participated, each with color change in a nonvital tooth. Fifty teeth were randomly divided into two groups (n=25), and the teeth were bleached using either 35% hydrogen peroxide (G1) or 37% carbamide peroxide (G2). Intracoronary bleaching was carried out by a technical "walking bleach" over four sessions. Gingival crevicular fluid samples were collected and used to quantify the IL-1b and RANK-L secreted levels. Samples of six periodontal sites (three vestibular and three palatal) were collected for up to six months (at the beginning of the study [baseline] and at one week, one month, and six months posttreatment). The color change was visually monitored using the Vita Bleached Guide (DSGU). **Results:** Comparing each time to baseline assessment, a significant increase in the levels of IL-1b and RANK-L across time points was detected (p,0.05). The color change was 4 in G1 and G2, and a statistically significant difference (p,0.05) was found at the month time point between the groups. Using the Spearman test, a strong correlation (.0.8) between the IL-1b and RANK-L levels in both groups at all time points was detected. **Conclusions:** Nonvital bleaching using a technical walking bleach induces an increase in the IL-1b and RANKL production in periodontal tissues, which persists for six months after treatment. Both biomarkers were highly correlated in both groups and at all time points. © 2019

