

EFFECT OF SMOKING AND ESTROGEN SUPPLEMENTATION ON INTERPROXIMAL ALVEOLAR BONE LOSS IN WOMEN

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Abstract

This study examined the effects of cigarette smoking and hormone replacement therapy mainly estrogen supplementation, on interproximal alveolar bone levels in women. A total of 554 women, 286 postmenopausal (50-74 yrs. old) and 268 premenopausal (25-49 yrs old) were included in the study. The postmenopausal group included 77 women receiving hormonal replacement therapy (HRT) and 209 who did not receive HRT (Non-HRT). These groups were analyzed with respect to smoking history as non-smoker, former smoker and current smoker using the Fisher's protected least significant difference multiple comparison procedure. Data adjusted for age effects were compared for various groups of premenopausal and postmenopausal women. For those who never smoked, postmenopausal Non-HRT women showed significantly greater ($P < 0.05$) alveolar bone loss compared to premenopausal women (3.23 mm VS. 2.64 mm, respectively); however, postmenopausal women receiving HRT showed no significant difference from the premenopausal group (2.92 mm and 2.64 mm, respectively). This suggests a protective effect of estrogen on alveolar bone in women who never smoked. In contrast, among current smokers, postmenopausal women on HRT showed levels of alveolar bone loss comparable to postmenopausal women not taking HRT (3.91 and 3.82 mm), and significantly greater alveolar bone loss ($P < 0.05$) than premenopausal women (3.91 VS. 3.23 mm). Hormone replacement therapy, which was mainly estrogen, likely, has a protective effect on interproximal alveolar bone in postmenopausal women, which is negated by cigarette smoking. This study suggests that estrogen deficiency is a risk factor for periodontal disease.

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