

Abstract

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One-year Effects of Vitamin D and Calcium Supplementation on Chronic Periodontitis.

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BACKGROUND: A previous study reported by this group, found that patients in periodontal maintenance programs taking vitamin D and calcium supplementation had a trend for better periodontal health compared with patients not taking supplementation. The objective of the present study was to determine, for the same cohort of subjects, whether such differences persisted over a one-year period.

METHODS: Fifty-one patients enrolled in maintenance programs from two dental clinics were recruited. Of these, 23 were taking vitamin D (≥ 400 international units/day) and calcium (≥ 1000 mg/day) supplementation, and 28 were not. All subjects had ≥ 2 interproximal sites with ≥ 3 mm clinical attachment loss. For mandibular-posterior teeth, gingival index, plaque index, probing depth, attachment loss, bleeding upon probing, calculus index and furcation involvement were evaluated. Photostimulable-phosphor, posterior bitewing radiographs were taken to assess alveolar bone. Daily vitamin D and calcium intakes were estimated by nutritional analysis. Data were collected at baseline, 6 months, and 12 months.

RESULTS: Total daily calcium and vitamin D intakes were 1769 mg (95% confidence interval: 1606-1933) and 1049 IU (781-1317) in the taker group, and 642 mg (505-779) and 156 IU (117-195) in the non-taker group, respectively ($p < 0.001$ for both). Clinical parameters of periodontal health improved with time in both groups ($p < 0.001$). When clinical measures were considered collectively, the differences between supplement takers and non-takers had the following p values: baseline ($p = 0.061$), 6 months ($p = 0.049$), 12 months ($p = 0.114$). After adjusting for covariates, the p values for the effect of supplementation were: baseline ($p = 0.028$), 6 months ($p = 0.034$) and 12 months ($p = 0.058$).

CONCLUSION: Calcium and vitamin D supplementation (up to 1000 IU daily) has a modest positive effect on periodontal health and consistent dental care improves clinical parameters of periodontal disease regardless of such supplements. Our findings support the possibility that vitamin D may positively impact periodontal health and confirm the need for randomized clinical trials on the effects of vitamin D on periodontitis.

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