Periodontal Therapy Helps Patients With Type 2 Diabetes

Researchers find oxidative stress levels reduced to those of nondiabetic patients

CHICAGO—October 31, 2006—When patients with Type 2 diabetes and periodontal disease receive periodontal therapy, they often experience a reduction in their levels of oxidative stress, a condition in which antioxidant levels are lower than normal. Patients' stress levels after periodontal therapy were similar to those of nondiabetic patients, according to a new study that appeared in the November issue of the *Journal of Periodontology* (JOP

Abstract

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Decreased Lipid Peroxidation Following Periodontal Therapy in Type 2 Diabetic Patients

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Background: Although diabetes mellitus and periodontal disease promote atherosclerosis, the relation of oxidative stress with these diseases remains unclear. To investigate the influence of periodontal disease on oxidative stress, we assessed the effects of initial periodontal therapy on lipid peroxide (LPO), an oxidative stress index, in type 2 diabetic and non-diabetic patients.

Methods: Seventeen subjects with or without type 2 diabetes were enrolled in this intervention study. No patient had a history of cardiovascular or peripheral vascular disease. Five type 2 diabetic and six non-diabetic patients, all with moderate to severe periodontal disease, received and completed the initial periodontal therapy and examination. Before and after the therapy, patients underwent medical examinations and blood determinations, including LPO.

Results: Before the therapy, the periodontal probing depth and bleeding on probing (BOP) were similar between groups. LPO, triglyceride, and white blood cell counts were significantly higher in diabetic than non-diabetic patients. Therapy improved the periodontal parameters in both groups and significantly decreased LPO in diabetic patients. Anti-malondialdehyde-modified low-density lipoprotein (MDA-LDL) antibody, a marker of oxidized LDL, significantly decreased with treatment in both groups. Overall, Spearman rank correlation showed no significance between periodontal parameters and LPO or anti–MDA-LDL antibody, but BOP tended to correlate with LPO in diabetic patients ($r = 0.585$; $P = 0.0791$).

Conclusion: Although this is a small and preliminary study, and the changes of LPO and anti–MDA-LDL antibody were within the normal range, the initial periodontal therapy significantly decreased LPO, an oxidative stress index, in type 2 diabetic patients with periodontal disease.