

Periodontitis and diabetes associations with measures of atherosclerosis and CHD

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Diabetes is linked with more severe periodontal disease and with coronary heart disease (CHD). The purpose of this study was to determine if periodontal infection was a modifier in the risk that diabetes poses for increased carotid artery intimal-medial wall thickness (IMT) and advanced atheroma lesions as reflected in atherosclerotic plaque calcification measured by acoustic shadowing. Comparisons analyses of cardiovascular outcomes were performed based upon periodontitis and diabetes status. Periodontitis was measured using pocket depth and attachment loss at six sites per tooth. Cross-sectional data on 6048 persons aged 52–74 years were obtained from the Dental Atherosclerosis Risk in Communities Study. Participants without diabetes ($n = 5257$) were compared to those with diabetes ($n = 791$). Dependent variables were thick IMT (>1 mm), presence of acoustic shadowing, and prevalent CHD. All models were adjusted for the following covariates: gender, age, race/center, LDL and HDL cholesterol, BMI, triglycerides, hypertension, smoking, income and education. Multivariate model, all non-normally distributed variables were transformed and multivariable logistic regression analyses were performed to evaluate the relationship between periodontal infection, diabetes, and cardiovascular outcomes. Individuals with diabetes and with severe periodontitis were found to be significantly more likely to have IMT > 1 mm [OR = 2.2, (1.4–3.5)], acoustic shadowing [OR = 2.5, (1.3–4.6)], and CHD [OR = 2.6, (1.6–4.2)] compared to those without diabetes or periodontal disease. Results from this study suggest that among people with diabetes, periodontal disease may increase the likelihood of subclinical atherosclerotic heart disease and CHD.

Biography

Janet H. Southerland has been a dental educator for over 15 years. She received a doctorate of dental surgery degree (D.D.S.) at the University Of North Carolina UNC School Of Dentistry in 1989, has a Bachelor of Science in Dental Hygiene and a Bachelor of Art in Zoology, both earned at UNC. Dr. Southerland also completed a master's of public health degree from the UNC School of Public Health and a Ph.D. in Oral Biology from the UNC School of Dentistry. Over her academic career at UNC Chapel Hill she has served as the Chair of hospital dentistry, chief of Oral Medicine, Director of the hospital dental clinic and director of the General Practice Residency Program.

Southerland has been actively involved in research focused on the study of the relationship between diabetes and periodontal disease. Her other research experience is associated with early detection and interventions for oral cancer as well as oral manifestation of HIV/AIDS. She has served as a manuscript reviewer for such peer review publications as Journal of Periodontology, Journal of Periodontal Research, FASEB, and Acta Odontologica Scandinavica. In addition, she has served as a grant reviewer for HRSA and Robert Wood Johnson Foundation. Dr. Southerland has received numerous honors and awards most recently being selected and honored by the Nashville Health Council with one of its Women to Watch awards.

Southerland is an active member of national organizations that include, but are not limited to, the American Dental Association, American Association of Dental Research, and the International Association for Dental Research, the National Dental Association. She is also very active in several local organizations such as, the Tennessee Dental Association, Capitol City Dental, Pan Tennessee, a member of the METRC committee and RCMI committee, a member of the board of directors for the Nashville Care Board, a fellow for the Robert Wood Johnson (RWJ) Health Policy Center and a member National Advisory Committee of the Summer Medical and Dental Education Program (SMDEP) program funded by the Robert Wood Johnson Foundation.

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