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Association between periodontitis and early atherosclerotic vascular disease

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Background & Aim: We aimed to evaluate the association of periodontitis with the development of early atherosclerotic vascular disease in Korean adults.

Methods: In this cross-sectional study, a total of 1343 adults aged over 40 years were recruited from a community-based cohort of Yangpyeong County, Korea, during the period 2010e2014. Only dentate individuals were included in the study. Subclinical atherosclerosis (SA) was defined as carotid intima-media thickness (cIMT) of 0.754 mm, as assessed bilaterally by B-mode ultrasound. Peripheral arterial disease (PAD) was defined as ankle-brachial index (ABI) of 1.0, as measured by Doppler. History of periodontitis was assessed by measuring the radiographic alveolar bone loss (RABL) on a digital dental panorama and was classified into three groups: normal, moderate and severe periodontitis (two or more nonadjacent interproximal sites with RABL of 4 mm and 6 mm, respectively). The associations of periodontitis with SA and PAD were evaluated by multivariable logistic regression analysis and analysis of covariance, adjusted for age, sex, education level, tooth loss, smoking, drinking, exercise, obesity, triglycerides, HDL, LDL, hs-CRP, diabetes and hypertension. Stratified analyses were performed to identify specific risk groups.

Results: After controlling for confounders, severe periodontitis was associated with SA [adjusted odds ratio (AOR=1.55); 95% confidence interval (CI): 1.07e2.24] and PAD (AOR=2.03; 95% CI: 1.05e3.93). These associations were highlighted in never-smokers. For increasing severity of periodontitis, the adjusted mean cIMT increased (p=0.011) while that of ABI decreased (p=0.033).

Conclusion: Our data showed that periodontitis is a substantially important risk factor for atherosclerotic vascular disease among Korean adults.

Recent Publications

1. Lee J H, Shin Y J, Lee J H and Kim HD (2018) Association of tooth brushing and proximal cleaning with periodontal health among Korean adults: Results from Korea National Health and Nutrition Examination Survey in year 2010 and 2012. J Clin Periodontol. 45:322-335.
2. Lee J H, Shin M S, Kim E J, Ahn Y B and Kim HD (2017) The association of dietary vitamin C intake with periodontitis among Korean adults: Results from KNHANES . PLOS One. 12(5):e0177074.
3. Kim H D, Shin M S, Kim H T, Kim M S and Ahn Y B (2016) Incipient periodontitis and salivary molecules among Korean adults: association and screening ability. J Clin Periodontol. 43:1032-1040.
4. Ahn Y B, Shin M S, Han D H, Sukhbaatar M, Kim M S, Shin H S and Kim H D (2016) Periodontitis is associated with the risk of subclinical atherosclerosis and peripheral arterial disease in Korean adults. Atherosclerosis. 251:311-318.
5. Shin M S, Shin H S, Ahn Y B and Kim H D (2016) Association between periodontitis and salivary 8-hydroxydeoxyguanosine among Korean rural adults. Community Dentistry and Oral Epidemiology. 44(4):381-9.

Biography

Hyun-Duck Kim has completed his PhD at Duke University, USA. He is the Director/Professor at Duke University, USA. He has over 200 publications that have been cited over 200 times, and his publication H-index is 20 and has been serving as an Editorial Board Member of reputed journals.

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