

Deep sequencing of subgingival microbiota according to subclinical atherosclerosis in Korean adults: Pilot study

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Abstract

Subgingival microorganisms could be associated with cardiovascular disease and no study has analyzed the subgingival microbiota according to subclinical atherosclerosis (SA). This study aims to investigate subgingival microbiota related to SA by next generation sequencing (NGS) among Korean adults. From the Yangpyeong cardiovascular cohort, 15 SA cases 15 controls (mean age of 65 years), matched for age, sex and smoking history by 1:1 ratio, recruited in this cross sectional study. SA was assessed by carotid intima-media thickness. SA was defined as Carotid intima-media thickness ≥ 0.754 . Gingival crevicular fluid (subgingival plaque) was sampled from the gingival sulcus of the tooth with the most severe alveolar bone loss. For NGS, 16S rRNA genes from bacteria in subgingival plaque were pyrosequenced. Mann-Whitney test and Chi-square test were performed to assess the association between percentage amount and prevalence of microorganisms and SA, respectively. A total of 926 operational taxon units (OTUs) were pyrosequenced. In terms of percentage amount of OTU, 19 species showed difference between cases and controls. Among them, five species such as EU335295, *Capnocytophaga leadbetteri*, Oral014, EU150278 and AF385506 were higher in SA. In terms of prevalence of OUT, five species showed difference between cases and controls and Oral014 was high in SA. Five subgingival microorganisms, especially Oral014_s, were associated with SA. Further main studies are needed to rectify our results.

Biography

Hyun-Duck Kim has obtained his Doctor of Dental Surgery and PhD for Public Health Dentistry from Seoul National University School of Dentistry. He has worked as a Visiting Scientist in the Department of Oral health Policy and Epidemiology, Harvard School of Dental Medicine in 1998-1999 and 2006-2007 and in the Department of Periodontology, UNC in 2000. Currently, he is a tenure-track Professor in the Department of Preventive and Social Dentistry, SNU SOD. He has serviced as Vice-Dean during 2010-2011 and the Chairman of the Department of Preventive and Social Dentistry during 2012-2013. He has published and presented more than 200 topics, papers and books.

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