Effets of periodontal treatment on carotid intima-media thickness in patients with lifestyle-related diseases: Japanese prospective multicenter observational study

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ABSTRACT
Atherosclerosis, a chronic inflammatory disease in arterial blood vessels, is one of the major causes of death in worldwide. Meanwhile, periodontal disease is a chronic inflammatory disease caused by infection with periodontal pathogens such as P. gingivalis (Porphyromonas gingivalis). Several studies have reported association between periodontal infection and atherosclerosis, but direct investigation about the effects of periodontal treatment on atherosclerosis has not been reported. We have planned Japanese local clinics to determine the relationship between periodontal disease and atherosclerosis under collaborative with medical and dental care. A prospective, multicentre, observational study was conducted including 38 medical patients with lifestyle-related diseases in the stable period under consultation at participating medical clinics and 92 periodontal patients not undergoing medical treatment but who were consulting at participating dental clinics. Systemic and periodontal examinations were performed before and after periodontal treatment. At baseline, LDL-C (low-density lipoprotein cholesterol) levels and percentage (%) of mobile teeth were positively related to plasma IgG (immunoglobulin) antibody titer against P. gingivalis with multivariate analysis. Corresponding to improvements in periodontal clinical parameters after treatment, right and left max IMT (maximum intima-media thickness) levels were decreased significantly after treatment (SPT-S: start of supportive periodontal therapy, SPT-1y: at 1 year under SPT, and SPT-3y: at 3 years under SPT). The present study has clarified our previous univariate analysis results, wherein P. gingivalis infection was positively associated with progression of atherosclerosis. Thus, routine screening using plasma IgG antibody titer against P. gingivalis and periodontal treatment under collaborative with medical and dental care may prevent cardiovascular accidents caused by atherosclerosis.