MedicalXpress

Metabolomic profiling of antibody response to periodontal pathogens

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At the 97th General Session & Exhibition of the International Association for Dental Research (IADR), held in conjunction with the 48th Annual Meeting of the American Association for Dental Research (AADR) and the 43rd Annual Meeting of the Canadian Association for Dental Research (CADR), Jaakko Leskela, University of Helsinki, Finland, gave an oral presentation on "Metabolomic Profiling of Antibody Response to Periodontal Pathogens." The IADR/AADR/CADR General Session & Exhibition is held at the Vancouver Convention Centre West Building in Vancouver, BC, Canada from June 19-22, 2019.

Detection of periodontopathogen antibodies in circulation indicate exposure to periodontal pathogens. Inflammation, such as present in periodontal disease, has shown to modify lipoprotein metabolism and composition. In this study, Leskela and coauthors investigated the association between serum periodontopathogen antibody levels and various metabolite levels.

The study population consisted of 2,398 individuals whose serum antibody levels against P. gingivalis and A. actinomycetemcomitans were determined by multiserotype-ELISA. Nuclear Magnetic Resonance (NMR)-metabolomics platform determined a total of 68 metabolic variables, including lipoprotein particles, fatty acids, amino acids, metabolic substrates, glycoproteins and ketone bodies. P. gingivalis IgG antibody levels were associated negatively with Apolipoprotein A-I, HDL-bound cholesterol and especially cholesterol bound to larger HDL

particles. There was negative association in P. gingivalis IgA antibody levels with Serum total cholesterol and A. actinomycetemcomitans IgG.

The authors concluded that exposure to the major periodontal pathogens, P. gingivalis and A. actinomycetemcomitans, is associated with a proatherogenic lipoprotein profile, especially low high-density lipoprotein cholesterol levels. These results are in line with previous findings where periodontal disease is shown to associate with atherogenic diseases.

More information: This oral presentation, #2936, was held on Saturday, June 22, 2019 at 8:30 a.m. in Room 224 of the Vancouver Convention Centre West Building, Vancouver, BC, Canada.

Provided by International & American Associations for Dental Research