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Imbalances in the oral mucosal microbiota associated with oral mucosal diseases

Both recurrent aphthous stomatitis (RAS) and oral lichen planus (OLP) are common oral mucosal disorders with unknown etiopathogenesis. The oral mucosal microbiota on the lesions of either RAS or OLP were characterized in comparison with healthy microbiota of control subjects. There were no significant differences in the alpha diversity between the controls and either the RAS or OLP groups, however, the mucosal microbiota of both diseases showed increased inter-subject variability compared to controls. A comparison of the relative abundance of each taxon revealed decreasing state in the members of healthy core microbiota but increasing number of rare species in RAS. Particularly, decreased *Streptococcus salivarius* and increased *Acinetobacter johnsonii* were associated with RAS risk. A dysbiosis index, which was developed using the relative abundance of *A. johnsonii* and *S. salivarius* and the regression coefficients, correctly predicted 83% of the total cases for the absence or presence of RAS. Meanwhile, the mucosal microbiota of OLP were characterized as a decrease in *Streptococcus* and increases in gingivitis/periodontitis-associated bacteria. Because bacteria were abundantly detected within the OLP tissues throughout the epithelium and the lamina propria, the microbiota located within the mucosal biopsies of several OLP patients were analyzed. Surprisingly, a few species were highly enriched within the tissues, suggesting a potential pathogenic role in OLP. The knowledge on altered mucosal microbiota may provide diagnostic tools and new therapeutic targets for, in addition to insights into the pathogenesis of oral mucosal diseases.

Biography

Youngnim Choi (DDS) has completed her PhD from State University of New York at Buffalo and Post-doctoral studies from the National Human Genome Research Institute/National Institute of Health, USA. She is the Professor at the Seoul National University School of Dentistry. She has published more than 60 papers in reputed journals and has been serving as an Editorial Board Member of *Journal of Dental Research*. Her current research is focused on the role of host-microbe interaction in the pathogenesis of periodontitis, oral mucosal diseases, and autoimmune diseases.

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