



Source: J Periodontol. 2009 Mar;(80)3:436-46

Title: Identification of pathogen and host-response markers correlated with periodontal disease.

Authors: Ramseler CA, Kinney JS, Herr AE, Braun T, Giannobile WV, et al.

Overview:

This study examined the potential to develop a chair-side diagnostic test for periodontal disease. This test would evaluate combinations of host and bacterially derived inflammatory markers.

Summary of research:

- One hundred subjects equally divided into two groups: healthy/gingivitis and periodontitis.
- Whole saliva samples collected from all subjects.
- Salivary samples analyzed for levels of proinflammatory cytokines and bone resorptive/turnover markers.

Results and conclusions:

- Salivary biomarkers correlated with clinical, radiographic and bacterial levels in periodontitis patient subjects.
- Combinations of specific inflammatory mediators and specific bacterial levels provided highly accurate predictions of disease severity.
- There is significant potential for development of a chairside diagnostic test for oral and systemic diseases.

Key take-aways:

This study confirmed that certain combinations of inflammatory mediators and periodontal bacteria can be measured to predict the development and severity of periodontal disease. When it is available, a chair-side test will provide a powerful tool in our arsenal, helping us address periodontal disease, and potentially systemic conditions, in a proactive manner. Early prediction of disease severity will indicate the appropriate level of intervention to prevent tissue damage.

Implementation strategies:

Unlike the DNA-PCR saliva testing currently available, which tests for type and quantity of specific periodontal pathogens, this test would evaluate the severity of the host response. In other words, we would be able to measure the extent of inflammatory activity before the presence of clinical manifestations.

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Imagine being able to **predict** how severe the patient's response will be to a specific pathogen or group of pathogens. Once we have that data, we can then address the disease process proactively by treating and eliminating the pathogens that are triggering the host response. In addition to customizing clinical treatment this data is very significant when attempting to modify the host immune system response to prevent future disease.

Salivary testing of inflammatory mediators may potentially have use as an outcomes assessment tool. The therapeutic endpoints currently include clinical results and bacteriological results and will include inflammatory activity results in the near future. Having tests that measure bacterial and inflammatory levels will impact treatment decisions, maintenance and homecare recommendations and allow us to more accurately predict the likelihood of disease recurrence. It is indeed an exciting time to be a dental professional.

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