



Surveillance Spotlight...

What is the Role of Inflammation in the Relationship Between Periodontal Disease and General Health?

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The International Centre for Oral–Systemic Health, based at the University of Manitoba’s faculty of dentistry, was launched in January 2008. The centre is proud to partner with JCDA to provide summaries of contemporary literature and news in oral–systemic health that may affect modern dental practice. This month’s article discusses the role of inflammation in the relationship between periodontal disease and general health.

Inflammation has become a very important topic in discussions on the major threats to maintaining satisfactory health and healthy living. It appears there are strong associations between chronic systemic inflammation and cardiovascular disease, diabetes, cancer, arthritis, dementia and many other chronic diseases of aging. Two recent publications highlight the nature of chronic inflammation as part of periodontal disease, as a systemic result of periodontal disease and as a major negative factor for overall general health.^{1,2}

The relationship between periodontal disease, inflammation and general health has been discussed for several years.^{3–5} However, recent studies have provided more comprehensive evidence for the mechanistic linkages. There is increasing acceptance that periodontal disease shares some of the same chronic inflammatory mechanisms of these systemic conditions and that periodontal disease increases the overall systemic inflammatory burden that exacerbates these conditions.

The recent application of new knowledge and concepts regarding inflammation and periodontal disease has led to discussion of new approaches to therapy and comprehensive care that include holistic and interprofessional management of oral and systemic inflammation. The key points to consider within this new paradigm of patient care are:

- 1) Individuals respond differently to periodontal inflammation, systemic inflammatory burden and anti-inflammatory therapies because of genetics, environment, diet, stress and lifestyle choices.
- 2) Anti-inflammatory therapies may be targeted to reduction and elimination of oral biofilms, dampening of the local periodontal inflammatory response, interference with systemic biochemical messengers and mediators, or augmentation of natural body processes that resolve inflammation.
- 3) Smoking and visceral fat accumulations around the waist are perhaps the most important determinants of systemic inflammatory burden and response to periodontal inflammation.
- 4) Multidirectional reinforcement of health and wellness messages focused on systemic inflammatory burden need to be coordinated between the dental, medical and nursing professions, as well as nutritionists and caregivers.

It is likely that there will be continued interest in inflammation as the common denominator in periodontal disease and chronic diseases of aging. The cumulative damage to cells, tissues and organ systems mediated through long-standing inflammation cannot be disputed. The presence of severe periodontal disease contributes significantly to the overall systemic inflammatory burden. Currently, we cannot definitively conclude that periodontal disease causes systemic illness. However, we do know unequivocally that treatment of periodontal disease reduces systemic inflammatory burden, improves the function of vascular elements and provides better oral health. ♦

References

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