

## Periodontitis: Is it a risk factor for coronary heart disease?

Sir,

Periodontitis is a chronic infection caused by micro-organism, that severely compromises the supporting apparatus of teeth. The imperative relationship of periodontitis with coronary heart disease (CHD) have been shown in various cross-sectional and longitudinal studies.<sup>[1,2]</sup> A remarkable increase in publications on this topic have been tracked in more than 180 peer reviewed English language journals in last two decades.<sup>[3]</sup> Most of

these studies have shown a well established relationship between oral conditions, atherosclerosis and coronary heart disease.<sup>[4]</sup> Periodontitis and atherosclerosis have complex etiologies, genetic and gender predispositions and may share pathogenic mechanisms as well as common risk factors.

Atherosclerosis starts early in life since, disease progression is usually slow, clinical symptoms with or

without hospitalization is rare before 45 years of age. The oral infections and chronic inflammatory conditions such as periodontitis can accelerate the atherosclerotic process. The evident association between periodontitis and coronary heart disease is usually difficult to explore as they share common multi factorial cascade. These include smoking, low social economic status and unfavorable health care practices of the individual.<sup>[5]</sup> Literature search with this perspective reveals number of publications addressing the relation between periodontitis and coronary heart disease.<sup>[3,6-8]</sup> Some of the significant risk factors that could independently provoke periodontitis and cardiovascular disease are smoking, genetics, stress and increasing age. This may possibly lead to the misleading notion of the association of two diseases.

The Matrix metalloproteinase's (MMPs) also play a crucial role in periodontal tissue destruction and cardiovascular disease including the deleterious changes in extracellular matrix in the myocardium. Studies have also revealed that the inhibition of MMPs slows down periodontal attachment loss and the development of cardiac failure.<sup>[9]</sup> In addition, the oral cavity facilitates food mastication, digestion and acts as a doorway between the external environment and oral cavity. Poor oral hygiene and subsequent tooth loss can potentially affect gastrointestinal flora and nutritional status and they have implications for the development of chronic diseases.<sup>[7]</sup> It is therefore, essential to have definitive long term clinical studies that could demonstrate or further elucidate the associations between periodontitis and cardiovascular disease. However, by studying the apparent interaction between these two diseases, it is likely that we will learn even more about both.

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