

EDITORIAL

The new era of 'perio-focal infection'

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It was the beginning of 1900 when the idea of a possible connection between the mouth and the rest of the body first appeared in the medical literature. The notion of 'oral sepsis' then termed 'focal infection' was extensively debated among dentists and physicians of the time. Numerous diseases of unknown aetio-pathogenesis were thought to be causally linked to common oral infections (caries and pyorrhoea). The experimental evidence supporting this theory included several case series (Miller, 1891) and some animal experiments (Rosenow, 1919). Nevertheless it was so convincing that indiscriminate extractions became a common preventive strategy among dentists, as tonsillectomy was among physicians.

Little evidence however was produced on the possible mechanisms. Speculative reports were focused mainly on the pathogenicity of specific oral micro-organisms and their possible distant effects. No direct evidence of a causal association was further produced. This is why by the 1950s both physicians and dentists realized that although most of their patients had become edentulous no major differences on the onset and progression of systemic diseases were observed. The 'focal infection' hypothesis was rejected.

It took us more than a century to revive it again. Systematic reviews of clinical studies reveal consistent positive but moderate associations between oral infections (mainly periodontal diseases) and systemic conditions. New evidence from animal experiments suggests a plethora of plausible mechanisms linking oral and systemic health including systemic inflammation, bacterial burden and autoimmunity. A lot of questions, however, remain unanswered. Indeed although improving oral health may affect pregnancy outcomes (Michalowicz *et al*, 2006), reduce the risk of pulmonary infections (Taylor *et al*, 2000) or improve vascular health (Tonetti *et al*, 2007) most of the published literature is focused only on the association between periodontal diseases and systemic health. Little or no information is available on the association of caries or other oral diseases and their treatments with systemic

conditions. What is the role of common risk factors between oral infection and systemic diseases? Will large intervention trials be sufficient to prove a causal association?

The dental and medical communities are cautiously reconsidering the biological plausibility of the 'focal infection' theory and exerting far more scepticism than what was observed a century ago.

With this in mind, Oral Diseases presents a series of short critical reviews in periodontal medicine focused mainly on the association between periodontal diseases and systemic conditions. This series contains five state-of-the-art articles from established clinical scientists who interpret the available evidence of the 'perio-focal infection' associations. Expert independent medical reviewers have also been selected to critically appraise each manuscript and give their say on the topic in a one-page *critique* that is attached to each short review. As Guest Editor, I enjoyed being in the middle of all the discussions and learned how close dentists and physicians really are. I hope that the readers might benefit from this series, as I did, and be stimulated to do more in this area.

References

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