Association between periodontal disease and erectile dysfunction

Chronic periodontitis is a common inflammatory condition of infectious origin that affects the supporting periodontal tissues (including cementum, gingiva, periodontal ligament and alveolar bone) resulting in bone loss and, if left untreated, in tooth loss. In the year 2014, the global age-standardized prevalence of severe periodontitis between 1990 and 2010 was estimated at 11.2%.

The “periodontal medicine” concept, proposes a bi-directional linkage between CP and several systemic conditions including atherosclerosis, myocardial infarction, stroke, diabetes mellitus, and chronic obstructive pulmonary disease. This link is based in the central hypothesis that CP triggers both, local and systemic host inflammatory responses. Studies have demonstrated that CP induce altered vascular response, higher levels of adhesion molecules and increased expression of local and systemic inflammatory cytokines, resulting in a vascular endothelial dysfunction. In this context, recent studies offer new evidence indicating that CP may be also an important risk indicator or risk factor for erectile dysfunction (ED).

The 1992 National Institutes of Health Consensus Conference on Impotence suggested the replacement of the term “impotence” for ED, a more precise and accurate term to describe the condition characterized by the persistent inability to achieve or maintain penile erection sufficient for satisfactory sexual performance. ED is estimated to affect more than 18 million of men in the United States and projections estimate that more than 300 million men worldwide will suffer ED in 2025. ED may result from psychological causes, organic causes, (such as aging, vascular, endocrinological, anatomic, neurogenic, drug-induced) or a combination of both. However vascular disease is the most common cause of ED, comprising around 80% of cases.

In our study from the literature reviewed nine studies fulfilled the eligibility criteria and were systematically reviewed. Interestingly results from all the studies reported a statistically significant association between CP and ED. It is therefore tempting to speculate that individuals with CP are at increased risk on developing ED as compared to individuals without CP. However, it is pertinent to mention that a variety of factors may have biased these results. Is well known that tobacco smoking, alcohol consumption, poorly controlled DM, and coronary heart disease (CHD) are significant risk factors of CP as well as ED. It is important to mention that results from approximately 60% of the studies remained unadjusted for smoking and/or alcohol consumption, and in nearly 20% of the studies the results were not adjusted for CHD and DM. It is therefore hypothesized that besides CP other risk factors, such as chronic hyperglycemia, raised systemic levels of proinflammatory cytokines and cardiovascular disorders, may have significantly contributed in aggravating ED.

Vasculogenic ED diagnosis should include a comprehensive medical, sexual and psychological examination, including underlying cardiovascular risk factors assessment and current medication,

and other diagnostic tests to assess erectile function including nocturnal penile rigidity and Doppler ultrasound. However, only one study confirmed the diagnosis of vasculogenic ED using colored penile Doppler ultrasound to assess penis vascularity. In all the studies included in the present systematic review presence or absence of ED was self reported by the participants. Since the inclusion of study subjects was based in self reported questionnaire in all the studies it is possible that they might have been patients with ED in the control group and vice versa. In this regard the conclusions of the studies included in the present systematic review should be interpreted with caution.

Within the limits of the evidence available the relationship between these conditions remains debatable, and further longitudinal studies and RCT assessing confounders (such as, smoking and DM) and implementing accurate diagnostic tools for ED assessment are needed to establish real causation. From the literature reviewed, there seems to be a positive association between ED and CP; however, further well-designed controlled clinical trials are needed in this regard. It is emphasized that physicians should refer patients with ED to oral healthcare providers for a comprehensive oral evaluation and treatment.

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