



## Relationship between periodontitis and cardiovascular disease

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### Letter to Editor

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#### Dear Editor

In Iran, as in most countries of the world, cardiovascular diseases (CVDs) have been the leading cause of death in recent years and have replaced infectious diseases.<sup>1,2</sup>

According to the latest Global Burden of Disease (GBD) statistics, Iran has one of the highest rates of CVDs in the world and there is not much difference between genders and between rural or urban individuals, and even recently, the prevalence of the disease in young people has increased drastically.<sup>2</sup>

Due to the increasing age of the Iranian population, it is expected that the prevalence of these diseases will increase over the next decade, and hence, they should be paid more attention.<sup>1</sup>

On the other hand, several studies have shown that periodontal diseases are very common in Iran, however they are preventable and treatable.<sup>3</sup> These diseases are caused by inflammation of the gums due to chronic microbial infection in the tissues around the teeth, which leads to inflammation and destruction of the gums and protective tissues of the teeth, finally damaging the teeth.<sup>4</sup>

Considering that atherosclerosis, the most important cause of CVDs, is the result of a disorder in metabolism and accumulation of the cholesterol due to inflammation, it has been hypothesized for years that there may be a link between gingivitis and its circulatory inflammatory mediators entering the bloodstream, to the development of atherosclerosis, and several studies have been conducted and are ongoing.<sup>4,5</sup>

Currently, there is a consensus that both diseases are multifactorial and many risk factors are common between them, such as smoking, diabetes, addiction, old age, etc.<sup>5</sup>

Although some studies have not found a direct link between periodontal disease and CVDs, several meta-analyses have confirmed that there may be a link between the prevention and treatment of oral diseases and reducing the risk of CVDs.<sup>3,4,6</sup>

Therefore, in addition to conducting clinical trials in our country on this issue, it is recommended that

appropriate planning be conducted by health officials and health care providers to avoid the pressure caused by the burden and treatment costs of CVDs in coming years. This is possible by simply addressing preventable and treatable underlying causes such as periodontitis.

#### Conflict of Interests

Authors have no conflict of interests.

#### References

1. Sadeghi M, Haghdoost AA, Bahrapour A, Dehghani M. Modeling the burden of cardiovascular diseases in Iran from 2005 to 2025: The impact of demographic changes. *Iran J Public Health* 2017; 46(4): 506-16.
2. Sarrafzadegan N, Mohammadifard N. Cardiovascular disease in Iran in the last 40 years: prevalence, mortality, morbidity, challenges and strategies for cardiovascular prevention. *Arch Iran Med* 2019; 22(4): 204-10.
3. Petersen PE, Ogawa H. The global burden of periodontal disease: Towards integration with chronic disease prevention and control. *Periodontol* 2000 2012; 60(1): 15-39.
4. Cardoso EM, Reis C, Manzanares-Cespedes MC. Chronic periodontitis, inflammatory cytokines, and interrelationship with other chronic diseases. *Postgrad Med* 2018; 130(1): 98-104.
5. Liccardo D, Cannavo A, Spagnuolo G, Ferrara N, Cittadini A, Rengo C, et al. Periodontal disease: A risk factor for diabetes and cardiovascular disease. *Int J Mol Sci* 2019; 20(6): 1414.
6. D'Isidoro O, Perrotti V, Hui WL, Piattelli A, Iaculli F, Quaranta A. The impact of non-surgical therapy of periodontal disease on surrogate markers for cardiovascular disease: A literature review. *Am J Dent* 2019; 32(4): 191-200.

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