

## State of the art on correlations between periodontal disease and systemic pathologies. A critical review of the literature of periomedicine associated with a survey in adult population

**Bianchi M.E., Piazzani V2., Anzaldi T., Ganda A.R., Marchesini E., Bonfanti L., Rossini R.1, Casula I.2**

1Dental Hygiene Degree Course, School of Medicine, Università degli studi dell'Insubria of Varese, Italy

2University of Brescia, Italy

**Aim:** Periodontal disease represents the first cause of tooth loss in the adult population of industrialized countries, resulting in a serious impairment linked to the consequent loss of chewing and phonation. It also leads to a serious problem in relationships and in the aesthetics of the smile. In addition, for years now, it has been known that periodontitis can cause changes in the whole organism. Numerous clinical and experimental studies have in fact highlighted the presence of a strong association between this pathology and some systemic diseases, in particular, cardiovascular diseases, diabetes mellitus, Alzheimer's disease, respiratory diseases and complications during pregnancy. The aim of this work is to evaluate the knowledge of the correlation between periodontal disease and systemic diseases in the population, by submitting a questionnaire.

**Methods:** This work was carried out through a review of the scientific literature on the correlation between periodontal disease and systemic pathologies. Furthermore, a survey to assess knowledge of these correlations was given out to the population and it was answered by a sample of 907 people. In addition, the review of the literature has allowed to develop protocols for the management of various types of patients.

**Results:** This study confirmed the existence of a

correlation between periodontal disease and the onset of the previously mentioned systemic pathologies. In particular, there are two mechanisms mostly involved in the pathogenesis of these associations: the passage of periodontal pathogens in the systemic circulation and the systemic production of inflammatory mediators. In the first case samples of periodontal pathogens were indeed found inside the atherosclerotic plaques of patients with cardiovascular pathologies, inside the amniotic fluid and the placenta and in the brain and cerebrospinal fluid of patients affected by Alzheimer's disease. Also pulmonary translocation of oral pathogens has been shown to cause bacterial pneumonia. Instead in the second case it has been shown that the constant presence of pro-inflammatory cytokines can cause further vascular and brain damage. In addition, some of these cytokines can induce premature birth and increase insulin resistance in diabetic subjects. Furthermore, the survey has shown that, although most of the respondents knows about periodontal disease and its possibilities for prevention and treatment, knowledge of its correlation with the development of systemic diseases is still not very widespread. In fact, only a third of the sample is aware of these correlations and with regards to Alzheimer's disease, this percentage reaches 5%.

**Conclusions:** In the future further studies will have to be conducted to determine the mechanisms involved in the correlation between periodontal and systemic diseases, especially with regard to Alzheimer and some respiratory diseases. Finally, the dental hygienist appears to be extremely important in informing patients that the maintenance of correct oral hygiene can also bring benefits at a systemic level.