



International Conference on Modern Science and Scientific Studies

Hosted online from Madrid, Spain

Website: econferences.com

20th November 2025

IMPROVING METHODS FOR THE PREVENTION AND TREATMENT OF ORAL DISEASES IN PATIENTS WITH CARDIOVASCULAR DISORDERS

Muratova Saodat Kadirovna
Bukhara State Medical Institute

ABSTRACT

Cardiovascular diseases (CVDs) remain a major global public health problem and are frequently associated with chronic inflammatory conditions of the oral cavity, particularly periodontal disease. The potential bidirectional relationship between oral inflammatory processes and ischemic heart disease (IHD) highlights the importance of developing effective approaches for early diagnosis and integrated treatment. This study aims to assess the prevalence and clinical features of major dental diseases in patients with chronic IHD and to evaluate the effectiveness of a comprehensive therapeutic program. A total of 290 patients were examined using clinical, radiographic, laboratory, immunological and statistical methods. The findings demonstrated significantly higher rates of periodontal inflammation, altered salivary mineral composition and weakened local immunity among patients with IHD. Implementation of a complex treatment program, including carboxytherapy, improved oral health indicators and contributed to a more stable course of IHD. These results emphasize the need for multidisciplinary strategies to improve dental and cardiovascular outcomes in affected patients.

Keywords: Ischemic heart disease; cardiovascular diseases; periodontal disease; dental caries; oral mucosal lesions; carboxytherapy; oral microbiota; inflammation; prevention.

INTRODUCTION

Cardiovascular diseases (CVDs) are the leading cause of mortality worldwide and pose a serious challenge to healthcare systems. Over the past decades, numerous studies have reported a close association between chronic oral infections—particularly periodontal diseases—and the development or worsening of atherosclerosis and ischemic heart disease (IHD). Microbial toxins, systemic



International Conference on Modern Science and Scientific Studies

Hosted online from Madrid, Spain

Website: econfseries.com

20th November 2025

inflammatory mediators and immune dysregulation play a key role in this relationship.

At the same time, major dental diseases such as caries, periodontal disease and oral mucosal lesions are highly prevalent in adults, especially among patients with chronic systemic conditions. Recognizing the oral cavity as a potential source of systemic inflammation highlights the need for integrated clinical approaches. The purpose of this research is to study the prevalence of oral diseases in IHD patients, identify clinical and immunological changes, and develop an improved preventive and therapeutic strategy.

MATERIALS AND METHODS

The study included 290 patients aged 40–80 years, divided into:

- Main group: 220 patients diagnosed with chronic ischemic heart disease;
- Control group: 60 patients without cardiovascular pathology.

Methods used:

Clinical dental examination: assessment of caries intensity, periodontal indices, oral hygiene scores, mucosal lesions.

Radiographic diagnostics: evaluation of alveolar bone condition and periodontal tissue destruction.

Laboratory analysis: mineral composition of mixed saliva and serum markers.

Immunological testing: assessment of cellular and humoral immunity parameters.

Statistical methods: correlation analysis, comparative evaluation, reliability testing.

Biological material included mixed saliva, blood serum, and structured patient questionnaires.

RESULTS

Patients with IHD showed significantly higher prevalence of periodontal inflammation, deeper periodontal pockets and more intense bleeding indices compared to controls.

Radiographic examination revealed advanced alveolar bone resorption in the IHD group. Mixed saliva analysis showed disturbed mineral balance, reduction in calcium and phosphate levels, and a shift toward pathogenic anaerobic microflora. Immune



International Conference on Modern Science and Scientific Studies

Hosted online from Madrid, Spain

Website: econferences.com

20th November 2025

parameters demonstrated a decrease in local and systemic immune responses in IHD patients. Stomatological treatment positively influenced the clinical course of IHD by reducing chronic inflammatory load. The proposed multidisciplinary therapeutic program, including carboxytherapy, improved oral health outcomes and contributed to stabilization of IHD symptoms.

CONCLUSION

The study confirms a strong relationship between chronic oral inflammatory diseases and ischemic heart disease. Patients with IHD display more severe dental pathology, impaired immune responses and alterations in oral homeostasis. Implementation of a comprehensive preventive and therapeutic program—particularly with carboxytherapy—significantly improves oral health and may help stabilize cardiovascular status. These findings underline the importance of multidisciplinary collaboration between cardiologists and dental specialists to optimize patient outcomes.

REFERENCES

1. Blankenberg, S., et al. (2001). Inflammation and atherosclerosis mechanisms.
2. Ballantyne, C. (2005). The role of infection in cardiovascular diseases.
3. Spahr, A. (2006). Periodontal disease and its systemic effects.
4. Janket, S. J. (2008). Oral health and cardiovascular morbidity.
5. Petersen, P. E. (2005). Global epidemiology of periodontal diseases.
6. Ebisu, S., Noiri, Y. (2007). Microbiological factors in periodontal pathology.
7. Bartold, P. M. (2010). Periodontal inflammation and systemic conditions.
8. Orekhova, L. Y. (2009). Association of periodontal disease with internal pathology.
9. Kozlov, V. A. (1997). Systemic conditions in dental patients.
10. WHO. (2003). Oral health and systemic disease.