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IMPROVING METHODS OF PREVENTION AND TREATMENT OF DENTAL DISEASES IN PATIENTS WITH CHRONIC ISCHEMIC HEART DISEASE

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Relevance

Ischemic heart disease (IHD) remains one of the most significant causes of morbidity and mortality globally, accounting for more than 14 million deaths per year (WHO) [1]. At the same time, chronic oral diseases—particularly periodontal disease, dental caries, and oral mucosal lesions—represent widespread inflammatory conditions that affect a majority of the adult population worldwide [2]. Contemporary research has demonstrated a bidirectional relationship between periodontal inflammation and cardiovascular pathology, where oral microbial endotoxins and pro-inflammatory mediators accelerate endothelial dysfunction and contribute to atherosclerosis progression [3,4].

Despite these associations, dental status is still underappreciated in cardiovascular patients, and integrated treatment approaches remain limited. Given the high prevalence of both IHD and dental diseases, developing effective, evidence-based dental prevention and treatment programs for patients with IHD is essential.

Aim of the Study

To improve the effectiveness of prevention and comprehensive treatment of major dental diseases in patients with chronic ischemic heart disease through the development and implementation of an integrated multidisciplinary therapeutic program.

Materials and Methods

A total of 290 subjectsaged 40–80 years were enrolled, distributed as follows:

Main group (n = 220): Patients with clinically verified chronic IHD (stable angina, post-infarction cardiosclerosis).Control group (n = 60):** Individuals without cardiovascular pathology.

Examinations Conducted
-Dental clinical examination: assessment of caries intensity, periodontal status, and mucosal lesions.
Periodontal indices: KPI, PMA, GI, OHI-S [5].
Radiographic evaluation: orthopantomography, intraoral radiographs.
Laboratory diagnostics:
Mineral composition of saliva (Ca, P, Mg)
Cellular immunity (CD3, CD4, CD8 subsets)
Humoral immunity (IgA, IgM, IgG)
Circulating immune complexes (CIC)
* **Cardiological assessment:** frequency of angina episodes, ECG control.
* **Intervention:**

Oral sanitation
Periodontal therapy
Caries management
Adjunctive carboxytherapy
Hygiene education and preventive program
Statistics: $p < 0.05$ considered significant.

Results

Patients with chronic IHD showed:
Higher prevalence of periodontal disease: deeper pockets, 3–4 degrees of mobility, increased bleeding indices ($p < 0.05$) [6].
More intense dental caries: higher DMFT index compared with controls.
Oral mucosal lesions: including atrophic and erosive forms, detected significantly more frequently in IHD patients.
Radiological findings: more severe and generalized alveolar bone destruction.
Saliva analysis: decreased calcium and phosphate levels, indicating impaired remineralization potential.
Immunological abnormalities:decreased CD4+ T-cells, increased circulating immune complexes, reduced IgA levels, showing chronic inflammatory load [7].

Effect of Integrated Treatment
After introduction of the comprehensive therapeutic protocol:
Gingival inflammation decreased by 35–48%.
Periodontal pocket depth reduced significantly.
Saliva mineral levels partially normalized.
Immune markers improved, particularly IgA.
Many patients reported reduced angina frequency, improved tolerance to physical activity, and decreased systemic inflammatory symptoms
This indicates that oral rehabilitation can positively affect cardiovascular stability.

Conclusion
The findings confirm that chronic ischemic heart disease is closely associated with severe dental and periodontal pathology through shared inflammatory, immunological, and metabolic mechanisms. Poor oral health contributes to an increased systemic inflammatory background, which can aggravate the course of IHD. The integrated treatment and prevention program—including carboxytherapy—significantly improved oral and systemic outcomes in IHD patients. Multidisciplinary collaboration between dentists and cardiologists should become a routine clinical practice for improving patient health and reducing cardiovascular risks.

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