Stomatologiia (Mosk). 2014;93(3):18-20.

[Applying toothpaste and mouthwash BLUEM in complex oral care in patients with coronary heart disease.]

[Article in Russian]

Makeeva IM[1], Tambovtseva NV.

Author information

Abstract

For patients with coronary heart disease oral hygiene and treatment of oral mucosa inflammatory changes and periodontal disease are of vital importance. Dental status assessment in 110 patients hospitalized in cardiology department revealed that they all suffered from periodontal disease, diseases of teeth and oral mucosa. In 100% of cases it was necessary to improve oral hygiene. Inclusion in everyday hygienic oral care of toothpaste and mouthwash Bluem reduced the severity of inflammatory changes and improved the hygienic condition of the oral cavity.

PMID: 24990780 [PubMed - as supplied by publisher]

Application of toothpaste and mouthwash “BLUEM” in complex hygienic oral care for patients with coronary heart disease

I.M. Makeyeva, N.V. Tambovtseva

I.M. Sechenov First Moscow State Medical University

Summary. For patients with coronary heart disease oral hygiene and treatment of inflammatory changes of oral mucosa and periodontal diseases is very important. Assessment of dental status of 110 patients routinely admitted to the cardiology department showed that they all require treatment of dental and periodontal diseases and diseases of oral mucosa. In 100% of cases it is necessary to perform training on proper hygienic oral care. Inclusion of toothpaste and mouthwash “Bluem” in complex hygienic oral care reduced severity of inflammatory changes and improved the hygienic status of the oral cavity.

Keywords: coronary heart disease, oral hygiene, oral inflammatory diseases.

Importance of the problem. Coronary heart disease is an essential problem of today’s medicine and according to data of E.I. Chazov (2004) it is on the first place among mortality causes of world’s population and it is also one of the most prevalent causes of loss of earning capacity and disability [5]. Problem of influence of chronic infection foci in oral cavity on development of cardiovascular diseases is still important for all countries throughout the world: presence of odontogenic infection foci and their determined influence on cardiovascular status in this category of patients impose necessity for studying dental status and determination of oral inflammatory diseases [1, 2, 6, 7]. According to A. Spahr (2006) and M. Stelzel (2003) the etiological model of influence of odontogenic infection foci on development of cardiovascular diseases is associated with the fact that periodontal pathogenic agents are able to contaminate endothelial cells of coronary arteries promoting platelet aggregation [8, 9]. Despite development of more and more effective products for hygienic

oral care, the prevalence of periodontal diseases does not decrease even in somatically healthy patients (A.I. Grudyanov, 2004). It is well known, that patients taking antiarrhythmic and antihypertensive drugs may develop dryness of mouth, which promotes foul breath, quick formation of dental plaque, worsens prognosis for dental diseases and negatively influences cardiovascular status [3, 4, 7] and exacerbates unfavorable hygienic status of oral cavity.

Taking into account the prevalence of coronary heart disease, in these patients it is required to perform comprehensive assessment of dental status, to reveal odontogenic inflammation foci, inflammatory periodontal diseases and their treatment, development of recommendations on personal hygienic oral care, considering possible development of dryness of mouth mucosa. Traditional inclusion of chlorhexidine-based toothpastes and mouthwashes in complex treatment may cause such adverse effects as dysbiotic changes, discoloration of tongue and tooth, taste disorders. Therefore those studies are important which are designed to determine and assess efficacy of products for personal hygienic oral care for constant use with anti-inflammatory, antiseptic and moisturizing effect, but causing no dysbiotic changes in oral cavity.

Purpose of the study is to determine dental status of the patients routinely admitted to the cardiology department of University Clinical Hospital № 2 of I.M. Sechenov First Moscow State Medical University and assess efficacy of hygienic complex “Bluem”, containing lactoferrin and releasing active oxygen during use. Complex of dental hygiene products “Bluem” (toothpaste and mouthwash) is intended for hygienic oral care, including patients with dental implants. The toothpaste and mouthwash does not contain antibacterial agents, its efficacy is determined by the release of active oxygen and content of lactoferrin. The toothpaste and mouthwash can be recommended for constant use.

Methods and materials of the study. One hundred and ten (110) patients with coronary heart disease routinely admitted to the cardiology department participated in this study. Only those patients participated in the study that could perform appropriate self-care and were ready to correct oral hygiene skills. During the study we assessed compliance of patients' dental status with dentist's conclusion included in the list of documents necessary for hospital admission.

Patients were examined on admission day. All patients underwent a standard dental examination with determination of hygienic and periodontal indexes: OHI-S index [Green J.C., Vermillion J.R., 1964], periodontal index – PI [Russell A., 1956], gingival bleeding index [Muhlemann H.P., 1971], papillary marginal alveolar index – PMA [Parma C., 1960]. After examination the patients obtained recommendations on necessary treatment and hygienic oral care. Patients with suspected periapical odontogenic foci and chronic generalized severe or moderate periodontitis underwent orthopantomography.

Further the patients were divided in two groups: study group where hygienic care was performed with toothpaste and mouthwash "Bluem". Patients that continued using their own regular hygienic care products after training were included in control group. If they have not previously used dental floss, they were recommended to use it every day and appropriate training was performed. Protocol of "Bluem" complex application included tooth brushing with the toothpaste twice a day and use of the mouthwash three times a day. Another determination of indexes was performed on Day 10.

Study results. As a result of performed dental examination it was determined that among 110 patients oral cavity was treated only in six of them (5.45%) (i.e. no unsealed dental decay cavities, abscess formation, fistulas, manifestations of oral mucosa diseases were revealed), although all the patients submitted the

medical note on treatment. In patients' words, they obtained the medical note on treatment without examination of oral cavity.

At examination of patients periodontal diseases were revealed in 100 patients (90.91%), provided that chronic generalized moderate periodontitis was revealed in 34 patients (36.36 %), and chronic generalized severe periodontitis was revealed in 66 patients or in 60% of cases. Analysis of patients complaints revealed during the interview provided us with data presented in Table 1.

Complaints revealed during the interview Table 1

Complaints	**Number of patients (total/%)**
Gingival bleeding	102 (92.73)
Pain caused by different irritants	86 (78.18%)
Burning tongue	73 (66.36%)
Dryness of mouth	19 (17.27%)
Foul breath	91 (82.73%)

Chronic recurrent ulcerative stomatitis was revealed in 14 patients (12.73%), angular cheilitis – In 34 patients (30.91%), lichen ruber planus (typical form) in 3 patients (2.73%).

At performance of index assessment the following data were obtained: mean value of OHI-S index was 3.6±0.6; PMA – 69.5±3.1; PI – 4.6±0.4. Gingival bleeding of first and second degree was revealed almost in all patients.

It was found that normalization of hygienic oral care provided positive effect on oral cavity and periodontal status, which was represented by the dynamics of hygienic and periodontal indexes (Table 2). However, in study group where patients used "Bluem" complex positive dynamics is more

pronounced. Patients who used “Bluem” complex noted its pleasant organoleptic properties and abundant foaming during use.

Table 2

Dynamics of hygienic and periodontal indexes values

Index	Study group “Bluem”		Control group	
	before	after 10 days	before	after 10 days
OHI-S	3.6±0.6	1.7±0.4	3.6±0.6	2.5±0.6
PMA	69.5±3.1	52.1+2.4	69.5±3.1	58.3±1.8
PI	4.6±0.4	4.3+0.2	4.6±0.4	4.5±0.3

Analysis of dynamics of hygienic and periodontal indexes showed that patients who used “Bluem” complex had more positive tendency, than patients from control group. Thus, mean value of OHI-S index in study group is on the line between satisfactory and poor value, while in control group mean value of OHI-S index corresponds with poor result. In study group PMA index value decreased by 24.7%, while in control group this value was only 15.9%. Significant dynamics of PI index was not seen in any group as bone tissue status could not improve as a result of normalization of hygienic oral care.

Performed study enabled us to make the following conclusions:

1. Among 110 examined patients of cardiology department oral cavity was treated only in six patients and that comprises 5.45% cases. It is necessary to pay close attention to dental status of patients with coronary heart disease.
2. Data obtained in this study indicate that 100% of patients of cardiology department require dental treatment and/or professional oral hygiene and tooth brushing training.
3. Inclusion of toothpaste and mouthwash “Bluem” with active oxygen and lactoferrin provides positive dynamics of hygienic oral status and

decreases severity of inflammatory changes of gingival tissue in patients with coronary heart disease.

Literature

1. Arutyunov S.D., Pleskanovskaya N.V., Naumov A.V., Kutusheva D.R., Bogatyreva A.M., Burduli V.N.// Periodontal diseases and "systemic diseases": known past, promising future.// Periodontology. – St. Petersburg, – 2009. – № 1 (vol. 50). – P. 3 – 6.
2. Barteneva T.A. Treatment and prevention of periodontal diseases in patients with coronary heart disease. Dissertation of PhD, 2009.
3. Buryagina N.V. Chronic oral infection with underlying coronary heart disease // Fundamental researches. – 2013. – № 5 (Part 2). – P. 250-255.
4. Gazhva S.I., Pichugin V.V., Sokolov V.V. State of dental status in patients with cardiovascular diseases// "Nizhny Novgorod Medical Journal". – 2008. – № 2, Issue 2. – P. 49-51.
5. Chazov E.I. How to improve efficacy of treatment of cardiovascular diseases? Healthcare. 2004. – № 3. – P. 3-5.
6. Yudina N.A., Leus P.A. Chronic infection of oral cavity and coronary heart disease: possible relationship and ways to reduce the impact of dental diseases on development and progression of coronary artery disease// The Dental Journal. – Moscow, 2008. – № 2. – P. 24-29.
7. Juliette Reeves. Systemic implications of oral health: cardiovascular disease// The Dentist. – 2007. – № 11. – P. 26-29.
8. Spahr A. Periodontal infections and coronary heart disease: role of periodontal bacteria and importance of total pathogen burden in the Coronary Event and Periodontal Disease (CORODONT) study. // Arch Intern Med. – 2006. – 166 (5):554-9.
9. Stelzel M. Periodontal disease and coronary heart disease: review. Kvintessentsiya, № 1, 2003. – P. 29-34.