

Organization of Dental Care for Adults with Cardiac Arrhythmia against the Background of Anticoagulant Therapy

ABSTRACT

The high prevalence of cardiovascular diseases among the adult population leads to the risk of disability and mortality of people of working age. At the same time, this group of patients also needs comprehensive dental management and consideration of pharmacotherapeutic features. The growing cost of dental services leads to a decrease in the availability of dental care, especially taking into account the age criteria of patients with heart rhythm disorders. According to opinion polls, less than 5% go to the dentist for preventive purposes. However, patients taking anticoagulant therapy are at high risk of developing complications during dental interventions, which means they require increased preventive control by the dental care organization system.

Purpose: to evaluate aspects of the organization of dental care for patients with a history of cardiac arrhythmia and taking anticoagulant therapy.

Methodology: a prospective study based on the data of the copy, based on the results of an objective examination conducted by dentists (n=105), as well as an anonymous questionnaire of patients with rhythm disorders (N= 100) about the subjective assessment of the oral cavity and their awareness of methods and tools of prevention.

Results: patients with cardiac arrhythmia taking anticoagulant therapy have an increased risk of bleeding as part of dental interventions. For the studied group of patients, an objective examination revealed a characteristic clinical picture of the oral cavity. The characteristics required for drawing up a personalized treatment plan for patients with cardiac arrhythmia were also identified. As part of the study, data on the degree of awareness of patients and their subjective assessment of the state of the oral cavity were obtained.

Conclusion: patients taking anticoagulant therapy require increased attention during an appointment with a dentist. It is important to identify all predictors of the development of complications, during the collection of anamnesis, to identify and level the low awareness of the patient about the methods and tools of prevention, as well as to conduct personalized oral care training.

Key words: anticoagulant therapy, heart rhythm disturbances, dental treatment

Introduction

1. INTRODUCTION

Cardiovascular diseases occupy a leading position in the structure of morbidity and mortality not only in Russia, but also in the world [1,2]. One of the main methods of prevention of cardiovascular diseases is oral anticoagulant therapy [3].

Due to the high prevalence of this group of diseases, the dentist is increasingly confronted at the reception with patients taking anticoagulant therapy [4]. Dental interventions are always associated with the risk of blood loss, and a specialist with limited knowledge in the field of pharmacotherapy features of this category of patients creates an increased risk of extensive bleeding, which will threaten the patient's life [5].

To date, many authors are conducting research on the management of patients taking anticoagulant therapy [6,7,8].

Thus, taking into account the risk of bleeding during dental intervention, the organization of stages of dental treatment is critically important.

Purpose: to evaluate the aspects of providing dental care to patients with a history of cardiac arrhythmia and taking anticoagulant therapy.

2. MATERIAL AND METHODS

The prospective study included the results of an objective examination conducted by dentists of various specialties (therapeutic dentistry (47.6%), orthopedic dentistry (18.1%), surgical dentistry (21%), general dentist (13.3%), as well as subjective assessments of patients about the condition of the oral cavity according to anonymous questionnaires. The total number of doctors who took part in the study was 105 people. Dentists had different work experience: less than 5 years - 31.4%; from 6 to 10 years - 23.8%; from 11 to 20 years - 29.5% and more than 21 years - 15.2%.

Patients (n=100) who were included in the study, as part of an anonymous questionnaire, differed in age from 35 to 75 years and gender (40% men and 60% women).

The scientific work was carried out on the basis of the Institute of Dentistry of the Sechenov First Moscow State Medical University of the Ministry of Health of Russia (Sechenov University). The doctor was offered a data copy card to fill in. It included 13 parameters about the clinical experience of a specialist, as well as data on the state of the oral cavity in patients with rhythm disorders.

To identify the subjective assessment of patients about their condition, a questionnaire consisting of 37 questions was proposed. The questionnaire included passport and special parts, the latter covered not only the state of the oral cavity, but also approaches to hygienic oral care.

3. RESULTS AND DISCUSSION

Dental management and treatment of patients with cardiac arrhythmia taking anticoagulant therapy are at increased risk of complications and require increased vigilance on the part of the doctor.

The first stage of management of patients with cardiac arrhythmia is the collection of anamnesis [9]. According to the collected anamnesis, doctors identified the following complaints: hyperemia of the oral mucosa (36.2%), discomfort in the oral cavity (29.5%), burning sensation in the oral mucosa (14.3%), pain in the oral mucosa (22.9%), swelling of the tongue (12.4%), biting of the mucous membrane of the cheeks and /or tongue (16.2%).

One of the key aspects of the management of this category of patients is the careful collection of anamnesis in the context of identifying the features of pharmacotherapy. Anticoagulant therapy is a predictor of the development of bleeding during dental interventions [10]. According to the anamnesis, it was revealed that among the main anticoagulant drugs, there were anticoagulants and antiplatelet agents (53.3%) and proton pump blockers (10%), the remaining patients found it difficult to identify the drugs they were taking. This circumstance creates a risk of complications during dental intervention due to the lack of the possibility of conducting a clinical evaluation of drug interactions.

The second stage of clinical management was an objective examination of the oral cavity. Doctors diagnosed chronic periodontitis in 67.6% of cases, hyperemia of the oral mucosa (48.6%) and swelling of the mucous membrane of the cheeks, tongue and tooth prints (43.8%) were noted among other conditions. Also, 25% were diagnosed with carious teeth and lip cyanosis. It is important to note that all conditions diagnosed in patients with cardiac arrhythmia and receiving anticoagulant therapy were the result of microcirculation disorders, which are often associated with this cohort of patients [11,12]. Doctors also noted that they faced complications at different stages of dental treatment – 22% during endodontic

treatment and 20% during anesthesia. Complications manifested themselves in the form of bleeding.

Thus, the results of copying the data on objective examinations of dentists demonstrated that there are a number of objective features of the clinical picture of the oral cavity in patients receiving anticoagulant therapy.

Together with the data received from doctors, a subjective assessment of the oral cavity condition by patients was carried out. The results showed that 55% give a low and satisfactory assessment of the state of oral health.

Patients noted inflammatory diseases of the oral cavity in 67% of cases, 70% of respondents complained of bleeding gums and 67% indicated bruxism. One of the important aspects in the organization of dental care is the lifestyle of patients, as this directly affects the health of the oral cavity. According to the survey, it was revealed that the majority of patients (71%) abused smoking, alcohol consumption - 40%, the use of psychoactive substances - 23%. At the same time, patients noted that they do not pay enough attention to daily oral hygiene. The results of the study showed low awareness of patients about the methods of oral care. 78% of patients brush their teeth 1 time a day and devote less than a minute to it.

4. CONCLUSION

Patients with cardiac arrhythmia taking anticoagulant therapy need increased attention from the dentist. An important aspect is a comprehensive collected anamnesis even before the stage of dental intervention. It is necessary to assess the risks of complications and develop personal treatment tactics for the patient. The low awareness demonstrated by the results of the survey was confirmed by the data obtained using the maps of the copying of objective data collected by dentists.

The main objective characteristics of the oral cavity in patients with rhythm disorders receiving anticoagulant therapy: bleeding, hyperemia and hypertrophy of the oral mucosa.

REFERENCES

1. Kosolapov V.P., Yarmonova M.V. Analysis of high cardiovascular morbidity and mortality in the adult population as a medical and social problem and the search for ways to solve it. *Ural Medical Journal*. 2021.20(1), 58-64 (In Russian).
2. Areshidze D.A., Mischenko D.V., Makartseva L.A., Rzhepakovsky I.V., Nagdalian A.A. Some functional measures of the organism of rats at modeling of ischemic heart disease in two different ways. *Entomology and Applied Science*, 2018; 5(4), 2349-2864
3. Douketis JD, Spyropoulos AC, Duncan J, Carrier M, Le Gal G, Tafur AJ, Vanassche T, Verhamme P, Shivakumar S, Gross PL, Lee AYY, Yeo E, Solymoss S, Kassis J, Le Templier G, Kowalski S, Blostein M, Shah V, MacKay E, Wu C, Clark NP, Bates SM, Spencer FA, Arnaoutoglou E, Coppens M, Arnold DM, Caprini JA, Li N, Moffat KA, Syed S, Schulman S. Perioperative Management of Patients With Atrial Fibrillation Receiving a Direct Oral Anticoagulant. *JAMA Intern Med*. 2019 Nov 1;179(11):1469-1478. doi: 10.1001/jamainternmed.2019.2431.
4. Iwabuchi H, Imai Y, Asanami S, Shirakawa M, Yamane GY, Ogiuchi H, Kurashina K, Miyata M, Nakao H, Imai H. Evaluation of postextraction bleeding incidence to compare patients receiving and not receiving warfarin therapy: a cross-sectional, multicentre, observational study. *BMJ Open*. 2014 Dec 15;4(12):e005777. doi: 10.1136/bmjopen-2014-005777.
5. Larsen TR, Gelaye A, Durando C. Acute warfarin toxicity: An unanticipated consequence of amoxicillin/clavulanate administration. *Am J Case Rep*. 2014 Jan 27;15:45-8. doi: 10.12659/AJCR.889866.
6. López-Jornet P, Camacho-Alonso F, Escribano MG, Martinez-Beneyto Y. Behaviour and attitudes among Spanish general dentists towards the anticoagulated patient: a pilot

study. J Eval Clin Pract. 2010 Jun;16(3):539-41. doi: 10.1111/j.1365-2753.2009.01155.x. Epub 2010 Jan 21.

7. Rzhepakovsky I., Siddiqui S.A., Avanesyan S., Benlidayi M., Dhingra K., Dolgalev A., Enuashvily N., Fritsch T., Heinz V., Kochergin S., Nagdalian A., Sizonenko M., Timchenko L., Vukovic M., Piskov S., Grimm W-D. Anti- arthritic effect of chicken embryo tissue hydrolyzate against adjuvant arthritis in rats (X- ray microtomographic and histopathological analysis). Food Science & Nutrition 2021, 00:1-22.

<https://doi.org/10.1002/fsn3.2529>

8. Blinov AV, Gvozdenko AA, Kravtsov AA, Krandievsky SO, Blinova AA, Maglakelidze DG, Vakalov DS, Remizov DM, Golik AB. Synthesis of nanosized manganese methahydroxide stabilized by cysteine. Materials Chemistry and Physics. 2021;2651:124510

9. Osetrova T.S., Kurbet'ev S.G., Tarmaeva S.V., Pavlenko V.M., Vasyaeva L.Ye. Features of the organization of dental care for children on the example of the Khabarovsk Territory // In the collection: Materials of the XXIV International Anniversary Symposium "Innovative Technologies in Dentistry" dedicated to the 60th anniversary of the Faculty of Dentistry of Omsk State Medical University. Digest of articles. otv. ed. G.I.Skripkina. 2017.S. 367-372 (In Russian).

10. Balakumar P, Maung-U K, Jagadeesh G. Prevalence and prevention of cardiovascular disease and diabetes mellitus. Pharmacol Res. 2016 Nov;113(Pt A):600-609. doi: 10.1016/j.phrs.2016.09.040. Epub 2016 Sep 30.

11. Weltman NJ, Al-Attar Y, Cheung J, Duncan DP, Katchky A, Azarpazhooh A, Abrahamyan L. MANAGEMENT OF DENTAL EXTRACTIONS IN PATIENTS TAKING WARFARIN AS ANTICOAGULANT TREATMENT: A SYSTEMATIC REVIEW. J Can Dent Assoc. 2015;81:f20.

12. Raevskaya A I, Belyalova A A, Shevchenko P P, Karpov S M, Mishvelov A E, Simonov A N, Povetkin S.N. et al. Cognitive Impairments in A Range of Somatic Diseases Diagnostics, Modern Approach to Therapy . Pharmacophore 2020;11(1):136-41