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IMPROVEMENT OF METHODS OF TREATMENT OF PERSISTENT ATRIAL FIBRILLATION IN PATIENTS WITH ISCHEMIC HEART DISEASE

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ABSTRACT

Atrial fibrillation is the most common arrhythmia encountered in clinical practice and accounts for approximately one third of hospitalizations for cardiac arrhythmias. Cardiac dysfunction may result from myocardial ischemia, rhythm disturbances, valve dysfunction, pericardial damage, increased filling pressure or systemic resistance. Newly developed acute heart failure is most often observed in patients with acute coronary syndrome. The development of decompensation of chronic heart failure is facilitated by low adherence to treatment, fluid overload, infections, alcohol consumption, certain drugs (for example, non-steroidal anti-inflammatory drugs or thiazolidinediones, which cause fluid retention), etc. Acute heart failure is usually accompanied by congestion of blood in the lungs, although in some patients the clinical picture is dominated by signs of decreased cardiac output and tissue hypoperfusion.

Keywords: atrial fibrillation, Electrical cardioversion, verapamil, decompensation, thiazolidinediones, surgical treatment.

RELEVANCE

Atrial fibrillation is the most common arrhythmia encountered in clinical practice and accounts for approximately one third of hospitalizations for cardiac arrhythmias. Its prevalence is estimated from 0.4% to 1% among the general population, rapidly increasing with age and in the presence of organic heart disease: less than 1% at the age of 60 years, about 5% at 70-79 years, and about 10% among people over 80 years old [HRS / EHRA / ECAS Expert Consensus, 2012].

The persistent form occurs in 40% of all cases of atrial fibrillation, which causes a decrease or disability, a deterioration in the quality of life and a decrease in its duration due to a significant frequency of complications [5]. According to the Framingham Study, the annual risk of stroke in patients with atrial fibrillation is 2.5% and increases with age: from 1.5% per year in people 50-59 years old, to 23.5% per year in people 80-89 years old [3]. All this determines the need for temporary treatment of atrial fibrillation, one of the most important components of which is the restoration of sinus rhythm. However, even with the extensive experience accumulated in clinical medicine, the maintenance of sinus rhythm after its restoration is a more complex and multifaceted task. Electrical cardioversion (CV), or electrical impulse therapy, is the action on the heart of an electric current in order to restore the normal rhythm of contractions. It is used if persistent atrial fibrillation has led to the development of severe heart failure, as well as in cases where the restoration of sinus rhythm cannot be achieved with the help of medical cardioversion. After cardioversion, antiarrhythmic treatment should be continued to prevent recurrence of the disease. If atrial fibrillation reoccurs, cardioversion can be performed again to restore normal rhythm. In ventricular fibrillation, immediate cardioversion [2] is required, followed by intravenous infusion of lidocaine or amiodarone in combination with potassium and

magnesium preparations. There is no medication to eliminate ventricular fibrillation. Surgical treatment of persistent atrial fibrillation is used only when all possible conservative methods have not helped, and the patient's serious condition requires urgent treatment. Complicated heart surgeries restore the heart rhythm and prevent thrombosis and stroke associated with it. There are other techniques that can increase the success rate of standard external cardioversion. Taking antiarrhythmic drugs beforehand may be helpful. Propafenone and sotalol are indicated to reduce the energy required for cardioversion. Oral administration of amiodarone increases the effectiveness of cardioversion and lowers the defibrillation threshold. In a prospective randomized study, A. DeSimone et al., 2013, reported that the use of verapamil, a calcium channel blocker before electrical cardioversion in patients with persistent atrial fibrillation taking propafenone, can reduce the risk of early recurrent arrhythmia, in contrast to patients taking only propafenone. The efficiency of traditional external monophasic DC cardioversion according to research data varies from 70 to 90%. However, most patients with atrial fibrillation who have undergone cardioversion require antiarrhythmic drugs to maintain sinus rhythm (SR). Most studies show that the probability of establishing HR by the end of the year of treatment with antiarrhythmic drugs is about 50%. Despite antiarrhythmic therapy, the most common recurrence of atrial fibrillation occurs within three months after cardioversion for the first episode of atrial fibrillation. Return of Atrial Fibrillation during these 3 months is an indicator of incorrect therapy or inadequate doses of drugs and confirms the need to change the drug or increase the dose if it is a question of repeated cardioversion. [10]

As a result, it becomes necessary to develop a unified standard for preparing patients for planned cardioversion, which is mandatory for all patients who are planning to restore sinus rhythm. Preparation should include not only drug support, but an individual psychological approach in order to create the patient's readiness to cooperate with the doctor and increase the effectiveness of treatment and increase the duration of the relapse-free period. With clear indications for cardioversion, the procedure can achieve good results, reduce the number of complications, prevent early disability of a capable population, and reduce economic costs. [11]

Thus, the relevance of the study is determined, on the one hand, by the widespread prevalence of persistent atrial fibrillation, and, on the other hand, by insufficient knowledge of the issue of the criteria for choosing an adequate treatment strategy, which can be based on the search for objective structural and laboratory predictors of persistent atrial fibrillation in patients with coronary artery disease.

The "gold standard" of surgical treatment for atrial fibrillation remains the "labyrinth" operation, proposed by J. Cox in 1987, which allows to maintain sinus rhythm in more than 90% of patients within 10 years, however, this operation is technically very difficult, significantly lengthens the time of artificial circulation and myocardial ischemia, is associated with a high risk of intraoperative and early postoperative bleeding, so many surgeons avoid performing it. In this regard, attempts continue to simplify this operation without losing its effectiveness. The search goes both in the direction of the development of various schemes and modifications of the procedure, and in the direction of using various energy sources to create abnormal lines.[4] This procedure is most often performed in combination with the correction of valvular defects, while the incidence of atrial fibrillation in patients with coronary artery disease is also high (up to 35%), but its results in this category of patients have been little studied. It is also already known that only direct myocardial revascularization does not eliminate Atrial fibrillation in the postoperative period [8,14]. And the presence of atrial fibrillation in the early postoperative period significantly aggravates the patient's condition, lengthens the time of his stay in the intensive care unit and intensive care unit. During paroxysms of atrial fibrillation, the

blood flow through the shunts is significantly affected: for LVHA from 44.3 ± 26.2 ml / min during sinus rhythm to 26.2 ± 20.7 ml / min against the background of AF (p = 0.0003); for GSV - from 39.7415.6 ml / min during sinus rhythm to 33.3 ± 14.3 ml / min against the background of AF (p-0.001). [5,6].

Previous studies concerning the Maze operation and its various modifications were mainly aimed at studying mortality, morbidity, the need for pacemaker implantation and restoration of the transport function of the atrium after surgery. However, another important aspect of evaluating the outcome of the operation, along with the above, is the study of the quality of life at various times after the operation, which was also not carried out in patients with coronary artery disease after performing a combined intervention. [7,8] Another important point in assessing the effect of surgery to eliminate atrial fibrillation is the registration of its relapses. The most commonly used for these targets are standard ECGs, Holger ECG monitoring (24 h or 7 days). Moreover, these monitoring methods are often unable to record a large number of episodes. Thus, data recorded during 7-day or daily monitoring in combination with recordings during simitomal activation are able to document about 70% of relapses of atrial fibrillation, while their expected negative predictive value of absence of atrial fibrillation ranges between 25% and 40% [6]. More informative is continuous ECG monitoring, which can be continuous and long-term. Data from the type of continuous ECG monitoring devices can be used to assess the results of ablation atrial fibrillation [9]. Despite the indisputable advantages of implantable devices and their high diagnostic value in recognizing relapses of atrial fibrillation or atrial fibrillation, these devices are rarely used in clinical practice, even in the world's leading clinics. In the world literature, there are only a small number of works that provide an objective assessment of the effect of surgery to eliminate AF, based on the analysis of data from implantable devices [10,11]. In the domestic literature, there is even less data on this issue. In addition, there have been many studies examining various devices for atrial fibrillation ablation during open heart surgery, however, the transmurality of ablation lines in the clinic has not been evaluated, in this sense, it is useful to study the data of invasive EPI in patients after atrial fibrillation ablation. Thus, the danger of atrial fibrillation in terms of the occurrence of such life-threatening conditions as stroke, including cerebrovascular "sudden death", heart failure, arrhythmogenic dysplasia of the ventricular myocardium and a high percentage of disabilities in the occurrence of atrial fibrillation after working age, as well as a high frequency of surgery for its recurrence "Open heart", especially CABG, and its effect on blood flow through grafts, dictates the need to perform coronary artery bypass grafting operations in combination with removal of Fibrils atrial activity. It is necessary to conduct a randomized prospective study to study the effectiveness of ablation atrial fibrillation during coronary artery bypass grafting, based on data from implantable continuous rhythm monitoring devices with an assessment of the quality of life and the study of data from an invasive electrophysiological study.

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