VENTRICULAR ARRHYTHMIAS THE IMPACT OF THE QUALITY OF LIFE OF PATIENTS

Makhmudova Khanuza Davranovna
Assistant of Samarkand State Medical University

Abstract
Ventricular arrhythmias are quite often recorded in people without structural pathology of the heart. The application of current recommendations for the management of such patients in real practice has a number of objective and subjective limitations. In this regard, further studies aimed at clarifying the indications for the use of various treatment methods are relevant.

The aim of the study is to study the immediate results of various approaches to the treatment of frequent ventricular extrasystole (IE) and/or ventricular tachycardia (VT) in individuals without structural heart pathology.

Material and methods. The study included 85 patients (21 men and 64 women; average age 44 [32; 56] years) with ventricular arrhythmias in the absence of structural pathology of the heart. The average number of RE per day was 15,251 [8979; 23,642], unstable VT was registered in 26 patients, stable VT in 5. Further management tactics were determined taking into account the patient's preferences: 27 (32%) preferred performing an RF focus of arrhythmia, 37 (43%) — antiarrhythmic therapy (AAT), 21 (25%) — dynamic observation without treatment. Initially and after 1 month Holter electrocardiogram monitoring and quality of life (QOL) assessment were performed using a questionnaire SF-36.

Results. The results of RFA and AAT were comparable (p>0.1): after 1 month, the criteria for a positive antiarrhythmic effect were noted in 74.1% of patients in the RFA group, in 67.6% from the AAT group and in 38.1% from the follow—up group. Initially, the quality of life of patients in the subgroups of RFA and AAT did not differ significantly. At the same time, the quality of life of those who chose a wait-and-see tactic was significantly higher compared to patients from the RF groups and AAT (p=0.033). After 1 month after effective RF, QOL improved statistically significantly. If the procedure is ineffective, on the contrary, a decrease in the average score on the mental health scale (p=0.034) was revealed. In the AAT subgroup, the most often positive effect was achieved against the background of taking the antiarrhythmic IC class etacizine (69.7%), and side effects were less likely to occur during treatment with beta-blockers (8.5%). After 1 month, in patients with effective therapy, QOL indicators significantly improved, and with the ineffectiveness of AAT, they changed statistically insignificantly. In the group after 1 month of observation, none of the indicators of QOL changed significantly. However, in 8 patients with a spontaneous decrease in the number of RE, there was a significant increase in the average score on the mental health scale (p=0.024).

Conclusions. In patients with ventricular arrhythmias that occur in the absence of structural changes in the heart, a QOL assessment is advisable to choose the optimal management tactics. In patients with high QOL levels, immediate initiation of treatment is not indicated. Immediate results of AAT and RFA in idiopathic ventricular arrhythmias comparable. A positive result of antiarrhythmic therapy or RF is accompanied by an improvement in

indicators QOL corresponding to "mental health". Antiarrhythmic IC class etacizine in this group of patients is the most effective antiarrhythmic drug (efficacy 69.7% of cases with a frequency of side effects of 16.7%).

Keywords: ventricular extrasystole, ventricular tachycardia, idiopathic ventricular arrhythmias, antiarrhythmic therapy, radiofrequency ablation, quality of life.

Introduction

Idiopathic ventricular arrhythmias, i.e. arrhythmias that occur in people without structural pathology of the heart, are an urgent problem not so much because of their significance for patients (it is believed that in most cases they are benign), but due to the lack of clearly defined approaches to the management of such patients. It would seem that the available recommendations allow you to choose the right tactics for managing patients with this pathology. It is noted that it is necessary to treat only symptomatic arrhythmias, you need to start treatment with beta-blockers, and if they are ineffective, depending on the intended localization of the ectopic focus, use class IC antiarrhythmics (according to the E. Vaughan-Williams classification), or perform radiofrequency catheter ablation (RF). However, in the practical application of these recommendations, the doctor faces a number of unresolved problems and questions. First, the criterion of "symptomality" of arrhythmia in the case of ZHE it is often blurred. Quite regularly, we have to observe a situation when, when detecting frequent arrhythmia, a wide variety of patient complaints begin to be "written off". What should be the degree of impairment of the patient's well-being in order to begin active treatment? Secondly, the recommendations draw attention to the need to take into account the patient's preferences when determining a surgical or medicinal approach. At the same time, the patient's preferences are mainly formed on the basis of the medical information that he receives from the doctor. So thus, the doctor himself must have a fairly clear idea of what he recommends to the patient. Thirdly, the recommendation to start treatment with beta-blockers, whose effectiveness in ventricular arrhythmias is 10-20%, and according to some data, is comparable to placebo, actually means that RFA is the method of choice in a number of patients with similar pathology (in particular, when the arrhythmogenic focus is localized in the excretory part of the right ventricle). Fourth, which one should IC class antiarrhythmics be preferred when choosing medication? Flecainide is often used abroad for this purpose. This drug has not been registered in the Russian Federation, but there are lappaconitine hydrobromide (allapinin) and diethylaminopropionylethoxycarbonylaminophenothiazine (etacizine) synthesized in the UZB and successfully used in the post-Soviet space.

Thus, this topic needs further study in order to determine the optimal management tactics for a particular patient. The purpose of our research is to study the nearest the results of various approaches to the treatment of frequent FE and/or ventricular tachycardia (VT) in persons without structural pathology of the heart.

MATERIALS AND METHODS

A prospective observational study included 85 patients (21 men and 64 women; mean age 44 [32; 56] years) who met the inclusion criteria, which included: 1) frequent RE (more than 2000 per day according to Xolter monitoring (XM)) and/or stable ((CT) or unstable (VT) ventricular tachycardia, recorded on an electrocardiogram (ECG) or with XM; 2) age over 18 years; 3) signed voluntary informed consent to participate in the study, approved by the local ethics committee. The exclusion criteria were: — structural pathology of the heart (ischemic heart disease, heart defects, cardiomyopathy, left ventricular hypertrophy greater than 12 mm, left ventricular ejection fraction less than 50%, infiltrative heart disease, acute myocarditis, pericarditis); — channelopathy, the presence of additional atrioventricular connections; — atrial fibrillation/flutter; — the presence of implantable antiarrhythmic devices; — the presence of reversible or non-cardiac causes arrhythmias (electrolyte imbalance, hyperthyroidism), as well as severe concomitant pathology affecting the quality of life (QOL) of patients (oncological diseases, renal or liver failure, autoimmune diseases, anemia with hemoglobin levels less than 100 g/l, diabetes mellitus); — pregnancy.

The presence of hypertension was allowed (detected in 36 (42%) patients) without pronounced hypertrophy of the left ventricle. Initially, complaints and anamnesis were collected. Particular attention was paid to the relationship of patient complaints with cardiac arrhythmia, as well as the degree of arrhythmia exposure on the patient's well-being. Based on the survey, it was concluded that the relationship of complaints with arrhythmia was "there", "absent" or "fuzzy", and the violation of well-being was assessed in the form of the following options: "the patient does not feel a rhythm disturbance", "arrhythmia worries", "arrhythmia interferes with life". The average duration of arrhythmia was from 1 to 320 months (an average of 27 [8; 60] months), in 3 patients, the duration of the occurrence of IE could not be established. anamnesis regarding antiarrhythmic therapy was carefully collected: the experience of taking various antiarrhythmic drugs and their effectiveness were clarified, causes of withdrawal and side effects of drugs. The examination of patients was aimed at excluding structural pathology of the heart and included mandatory echocardiographic examination. The average left ventricular ejection fraction was 64±5%, the final diastolic volume of the left ventricle was 95±24 ml, the average thickness of the interventricular septum was 9±1 mm. An MRI of the heart was performed in 29 (34%) patients, which revealed no significant structural pathology. In persons over 50 years of age or with complaints of back pain Coronary artery disease was excluded by stress tests in 29 (34%) patients, by multispiral computed tomography of the coronary arteries in 6 (7.1%) patients, and by coronary angiography in 12 (14.1%) patients. All patients underwent XM with an assessment of the number of single, paired VE, episodes of SVE. The average number of single RE per day was 15,251 [8979; 23,642]. Paired RE were registered in 48 (56%) patients in an average number 15 [3; 149] per day. In 5 patients, the number of FE was less than 2000 per day, however, they were included in the study based on the registration of episodes of SVE. In general , episodes of lVT from three QRS complexes were recorded in 18 patients, and of longer duration in 8 patients. UHT served as the basis for the inclusion of 5 patients in the study. In addition, the quality of life of patients was

initially assessed using the Short Form Medical questionnaire Outcomes Study (SF-36). Scores were calculated on the scales of physical functioning (FF), role -playing activity (PA), bodily pain (BP), general health (GH), vitality (V), social functioning (SF), emotional state (ES) and mental health (MH), as well as the total indicator of physical health (FZsum), which is the average score on the first four scales and the total indicator of mental health (PZsum), the average score on scales 4-8. The average score on all scales was an average indicator of quality of life (KZHSR). A conversation was held with each patient explaining the essence of the disease and discussing possible methods treatment. Special attention was paid to the benign nature of arrhythmia, as well as the possibilities and limitations of medicinal and surgical approaches. Thus, the patient was not given "strict" recommendations on the use of one or another approach as the only correct one. Further management tactics were determined taking into account the patient's preferences, patients They were divided into three groups: they preferred the implementation of RF The focus of arrhythmia was 27 (32%) patients, 37 (43%) — antiarrhythmic therapy (AAT) (in this group of patients, the most effective antiarrhythmic drug was selected taking into account previous experience of taking medications), 21 (25%) refrained from active treatment, preferring the tactics of dynamic observation. 1 month after the selection of the drug or from the moment of performing RF in active treatment groups or after 1 month from the moment of inclusion in the study, the dynamics of arrhythmic syndrome, according to repeated XM data, and changes in quality were evaluated in the observation group life using the SF-36 questionnaire. The result of treatment was assessed as positive with a decrease in the daily amount of RE by 75% or more, a decrease in paired RE by more than 90%, and complete elimination of UHT or lVT. Statistical processing of the results was carried out using the SPSS software version 17.0. For a normal distribution, the data are presented as an average value ± standard deviation, in other cases the median [25th; 75th percentile] or a percentage of the total number of patients is indicated. The validity of the differences They were evaluated using the Mann—Whitney criterion, the Wilcoxon criterion , and the χ^2 criterion . The probability of $p<0.05$ was considered sufficient to conclude that the differences between the variation series were reliable. At $p>0.05$, the difference between the values was regarded as having a tendency to statistical differences.

RESULTS

Initially, 24 (28%) patients noted that they did not feel arrhythmia, 50 (59%) indicated that rhythm disturbances bothered them, and only 11 (13%) patients believed that arrhythmia "interferes with life." Among 61 symptomatic patients, the association of complaints with arrhythmia was found in 39 (64%) patients, in 18 (30%) this relationship was unclear, and in 4 (6%) there was no association of complaints with rhythm disturbances. Thus, in the general group of patients, ventricular arrhythmias were unambiguously symptomatic in only 46% of cases. The difference in the distribution of patients in terms of symptoms of arrhythmia between groups with different treatment tactics it was statistically insignificant, however, all patients who believed that "arrhythmia interferes with life" preferred active therapeutic tactics.

The average number of RE per day in the RF subgroup was initially significantly higher compared to the subgroup AAT (24 487 [14 425; 33 236] against 14,916 [8560; 20,932], p=0.003) and with a subgroup of observation (9605 [5394; 16,213], p<0.001). The differences in the initial number of RE in the AAT subgroups and the observation group were trending (p=0.077).

Patients who preferred wait-and-see tactics, They were younger compared to patients who chose AAT (38 [25; 50] years versus 51 [39; 58] years, p=0.012).

The average age of patients who chose RFA was intermediate in relation to the average age of patients of the other two subgroups — 44 [30; 58] years and differed from it unreliably. The arrhythmic history was maximal in the RF subgroup and averaged 52 [19; 94] months, which was significantly more than in the observation subgroup — 12 [3; 46] months (p=0.01) and tended to higher values compared with the AAT subgroup — 20 [7; 59] months (p=0.055). The prescription of the occurrence of arrhythmia. The difference between the AAT and follow-up subgroups was unreliable (p>0.01). According to the survey, patients who chose active therapeutic tactics in the RFA and AAT subgroups initially did not differ in QOL indicators, with the exception of the SF scale, according to which patients who chose RFA had an average lower score (p=0.033).

After 1 month, the criteria for a positive antiarrhythmic effect were noted in 74.1% of patients in the RFA group, in 67.6% from the AAT group and in 38.1% from the follow—up group. Thus, in terms of efficiency, RFA and AAT turned out to be comparable (p>0.1) and, of course, had a better result compared with the observation group: the average number of RE in the RFA group decreased to 573 [3; 9345] compared with the baseline (p<0.05), in the AAT group to 1014 [7; 7736] (p<0.05) and amounted to 7,653 [192; 14,834] (p>0.05) in the observation group. However, it is important to note that more than 1/3.

In an invasive electrophysiological study performed in the RF group, in 23 (85%) patients, the arrhythmogenic focus was localized in the right ventricle: in 19 (70%) patients in the excretory tract and in 4(15%) — in the field of the supply department. In 15% of cases, left ventricular ectopia was diagnosed: in 2 cases, the source of arrhythmia was localized in the area of the left sinus of Valsalva, in 1 case — in the area of the tributary department of the left ventricle, in 1 case epicardial localization was diagnosed. Complications in the form of hemopericardium (in 1 case requiring drainage) developed in 2 (7.4%) of patients.

1 month after RFA, there was a significant improvement in QOL on the W scale from 55 [30; 65] to 60 [50; 75] points (p=0.048) and a tendency to increase the average score for The scales of SF (p=0.068), PP (p=0.09) and PSUM (p=0.072).

At the same time, in patients with effective RFA, quality of life improved statistically significantly on the scales of F (p=0.03) and PP (p=0.017), and the average score on the scales of PSUM (p=0.064) and FGM (p=0.053) increased at the trend level. At the same time, if the procedure is ineffective, on the contrary, a decrease in the average score on the PP scale from 60 [36; 70] to 56 [32; 64] (p=0.034), the remaining indicators of QOL changed unreliably. In the AAT group, after 1 month, the effectiveness of therapy it was evaluated in 20 patients on the background of etacizine (in 4 cases in combination with beta-blockers), in 6 — on the background of isolated administration of beta-blockers, in 3 cases on the

background of taking propafenone, in 3 more on the background of taking allapinine (in one case in the form of isolated administration, in one more case in in combination with sotalol and beta-blocker), in 3 patients while taking sotalol and in 2 patients while taking amiodarone (in one case in combination with a beta-blocker). We did not set ourselves the task of evaluating the effectiveness of a single drug during a month of follow-up, but in each When prescribing the drug, we proceeded from a specific situation, taking into account previous experience of taking antiarrhythmics, their side effects and the age of patients. At the same time, we analyzed the anamnesis of all patients (from all three subgroups) included in the study, summarizing the data on previously used drugs with the results of the therapy we undertook. Of all the patients, only 15 (17.6%) people (from the RF

or follow-up groups) have never used AAT.

In other patients, we analyzed the effectiveness of the drug, the frequency of side effects, and also, the proportion of patients who were able to continue taking

the drug (i.e. either had no side effects, or the side effects did not require the withdrawal of the antiarrhythmic drug).

Thus, taking into account the anamnesis data, patients with ventricular arrhythmias were most often prescribed beta-blockers were well tolerated by patients (the lowest percentage of side effects), but their effectiveness was low. Most often, a positive effect was achieved against the background of taking etacizine. The percentage of side effects of the drug was slightly lower, compared with other class IC antiarrhythmics, in this regard, the total proportion of patients who were able to continue taking the drug exceeded 50%.

According to the results of the QOL analysis, after a month in the subgroup of patients with AAT, there was a significant increase in the average score on the G scale from 55 [44; 65] to 63 [45; 71] (p=0.037) and on the PP scale from 58 [52; 68] to 68 [59; 76] (p=0.018), as well as at the trend level (p=0.09) on the FF scale. These improvements were achieved at the expense of those patients who had a good antiarrhythmic effect, which also led to a significant increase in the rate of FGM (p=0.04) in patients with effective therapy. With the ineffectiveness of the AAT, the indicators of QOL changed statistically insignificantly.

In the observation group, after a month, none of the indicators of QOL changed significantly. There was only a slight tendency to increase the average score on the scales of PZ (p=0.081), FZsum (p=0.094), PZsum (p=0.07). It should be noted once again that the QOL level in the observation group was initially the highest of all three subgroups. However, in 8 patients with a spontaneous decrease in the number of RE, there was a significant increase in the average score on the PH scale from 60 [50; 75] to 74 [64; 86] (p=0,024). In 13 patients with no changes in the course of arrhythmia, all indicators changed unreliably.

DISCUSSION

The study of QOL and its dynamics against the background of various treatment methods in patients with cardiac arrhythmias, including RE, has been undertaken repeatedly. It was noted that patients with extrasystole have lower QOL compared to healthy ones. However, data on factors affecting QOL in patients with arrhythmia are contradictory. There is a relationship between the degree of decrease in QOL as with the number of extrasystoles per

day, so is the greater influence of the underlying disease or the degree of anxiety-depressive disorders compared with the severity of the arrhythmic syndrome itself.

RFA [13-15], AAT [12], as well as antidepressant therapy led to an improvement in QOL in ventricular arrhythmias [11]. The features of our study are primarily the selection of patients. Patients with any structural pathology of the heart were excluded, i.e. ventricular arrhythmias, which are commonly called "idiopathic", were studied. Of course, this definition is largely conditional, but a more detailed discussion of the "idiopathic" arrhythmia goes beyond the scope of this article. Of certain cardiovascular diseases, essential arterial hypertension was often detected in our patients, but without significant left ventricular hypertrophy. The issue of diagnosing chronic myocarditis, one of the possible manifestations of which may be ventricular arrhythmia, is debatable both from the point of view of "positive" diagnosis and from the point of view of excluding this disease, therefore, we focused primarily on the absence of structural changes in the heart (dilation or hypertrophy, local disorders or global contractility, coronary artery lesions, as well as arrhythmogenic dysplasia of the right ventricle). It is in such patients that the question of choosing the optimal treatment strategy is the most uncertain. The second feature of our study is the comparison of not only the results of surgical and therapeutic approaches (such studies have been undertaken before, their results

usually demonstrate the advantage of RF [2-4]), but also the selection of an observation group. The question of QOL interested us, first of all, as a possible criterion for choosing one or another tactic treatment. Currently, the main criterion for choosing between active treatment or observation is the symptomality of arrhythmia. As our data, as well as the results of other studies, demonstrate, patients' complaints, which they perceive as a result of rhythm disturbances, are not always such.

In another publication by the same authors, it is noted that among outpatient

patients without structural pathology of the heart, there is frequent It is asymptomatic in 44% of cases, however, it was in these patients that systolic dysfunction of the left ventricle was significantly more likely to develop.

Arrhythmia was more often symptomatic in women. It is also interesting that the predictor of the "symptomality" of rhythm disturbances was not the number of RE per day, but a greater value of the ratio of the RE coupling interval to the length of the preceding RR interval.

In our study, subgroups of patients with different management tactics according to the degree of symptoms and The associations of complaints with arrhythmia were comparable, but patients with lower QOL preferred active treatment (RFA or AAT). Moreover, a decrease in QOL on the SF scale, i.e., a restriction of social contacts that the patient associates with the disease, was a prerequisite for choosing a more aggressive treatment strategy (RFA). The importance of studying QOL for choosing a treatment method is also confirmed by the fact that the indicators The SF-36 questionnaire improved only in patients with a good effect of therapy, and in patients without significant dynamics of arrhythmic syndrome, they remained the same, or even decreased in case of failure of RF. In the latter situation, a slight decrease in QOL on the PH scale, which characterizes the patient's mood,

the presence of anxiety, neuroticism is easy to explain: hopes for "healing" were not justified due to the failure of the procedure. Of course, a decrease in QOL is only one of the factors determining the choice of treatment method. Thus, patients from the RF group had, on average, a higher daily intake the number of RE, compared to the other two subgroups. Of course, this fact is explained not only by the preference of patients, but also by the fundamental possibility of more effective implementation of RF with a sufficient number of RE (more often more than 10,000- 12,000 per day). In addition, the subgroups of patients differed in age. It can be assumed that younger patients have a higher quality of life. However, it is believed that the SF-36 questionnaire used in our work reflects those components of health that are not specific to age groups. In our opinion, the results obtained in the observation group are of considerable interest. It seems natural that patients with initially high QOL chose to abandon active treatment. At the same time, an increase in the average score on the PP scale among patients with spontaneous improvement indicates, firstly, a decrease in anxiety, an increase in positive emotions due to positive dynamics in health, and secondly, that the severity of arrhythmia itself still makes a significant component in indicators of quality of life. The confirmation of the latter position should also include the fact that the observation subgroup still tended to have a lower daily number of RE compared to the AAT subgroup. It is noteworthy that more than 1/3 patients in the observation subgroup, spontaneous improvement was noted during the month. Naturally, this does not guarantee a "cure", a recurrence of symptoms is possible in the future.

It is noteworthy that 25% of patients in the observation subgroup had an arrhythmia detection period of 3 months or less. It is logical to conclude that with a short period of occurrence of arrhythmia, it is most rational to refrain from immediate treatment, especially with a moderate daily amount of RE.

According to current recommendations, if the tactics of active therapy are chosen, then it is necessary to start with the appointment of beta-blockers, which is based primarily on the low frequency of their side effects. Our data are consistent with this position, since therapy beta-blockers most rarely led to the development of undesirable manifestations. At the same time, it must be clearly understood that with this approach, we begin treatment with one of the least effective drugs. According to our data, the effectiveness of beta-blockers in the case of ventricular arrhythmias was less than 24% of cases, which is consistent with the results of a number of other studies. The question arises: is it necessary to start such therapy, predicting in advance that in 4 out of 5 patients it will be ineffective? In our study, etacizine demonstrated the greatest effectiveness in comparison not only with beta-blockers, but also with other IC class antiarrhythmics. The effectiveness of the drug and the frequency of side effects in the presented work turned out to be comparable both with our data published earlier and with data from other researcher. It was the high efficacy of etacizine in combination with acceptable tolerability that caused the fact that during the month in our study in It was prescribed most often to a subgroup of patients with AAT. The main limitations of this work are the short follow-up period and the number of patients.

Currently, this study is ongoing. The results of long-term follow-up of patients without structural heart pathology suffering from ventricular arrhythmias with different management tactics will be presented later.

CONCLUSION

Clinical symptoms are clearly associated with cardiac arrhythmias in 46% of patients with ventricular arrhythmias that occur in the absence of structural changes in the heart. To choose the optimal management tactics for such patients, it is advisable to evaluate the quality of life. In patients with high QOL levels, especially when the occurrence of arrhythmia is less than 3 months old, immediate initiation of treatment is not indicated, given the possibility of spontaneous improvement in 38% of cases within the next month. In patients with ventricular arrhythmias and absence of structural pathology of the heart, the immediate results are AAT and RFA are comparable. A positive result of antiarrhythmic therapy or RFA is accompanied by an improvement in QOL indicators corresponding to "mental health". Class I antiarrhythmic etacizine in this group of patients is the most effective antiarrhythmic drug, providing positive dynamics of arrhythmic syndrome in 69.7% of cases with a frequency of side effects of 16.7%.

LITERATURE

1. Abdurasulovna, H. N., Akramovna, I. K., Rustamovna, A. K., & Egamkulovich, X. B. (2023). INFLAMMATORY ACTIVITY AND RENAL PATHOLOGY IN LUPUS NEPHRITIS. Spectrum Journal of Innovation, Reforms and Development, 13, 89-94.

2. Akramovna, I. K., & Rustamovna, A. K. (2023, November). ULTRATOVUSH TEKHIRUV USULINING ERTA RIVOZHLANGAN OSTEOARTHROSIS KASALLIGIDAGI DIAGNOSTIC AHAMIYATI. In International Conference on Medicine and Life Sciences (pp. 72-75).

3. Akramovna, I. K., & Zaynobiddin o'g'li, F. J. (2023). RISK FACTORS OF EARLY DEVELOPED OSTEOARTHRITIS. IMRAS, 2(1), 28-35.

4. Alisherovna, K. M. (2021). DISORDERS OF KIDNEY AND LIVER FUNCTION IN HEART FAILURE. POLISH SCIENCE JOURNAL, 156.

5. Alisherovna, K. M. (2022). PSYCHOSOMATIC CHARACTERISTICS OF PATIENTS WITH RHEUMATOID ARTHRITIS AND GOUT. Galaxy International Interdisciplinary Research Journal, 10(5), 665-671.

6. Alisherovna, K. M. CYSTATIN C IS AN EARLY MARKER OF DECREASED KIDNEY FUNCTION.

7. Alisherovna, K. M., & Xamroyevna, O. S. (2023). STUDY THE INFLUENCE OF CARDIOVASCULAR SYSTEM PATHOLOGY TO THE QUALITY OF LIFE. Journal of new century innovations, 36(1), 148-155.

8. Alisherovna, K. M., Akramovna, I. K., Bakhtiyorovich, U. J., Nizamitdinovich, K. S., Jasurovna, J. S., Kairatovna, R. A., & Abdukholikovna, E. S. (2023). EXACERBATIONS OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE

AND CORONARY ATHEROSCLEROSIS. Journal of new century innovations, 39(1), 176-178.

9. Alisherovna, K. M., Alisherovich, B. Z., Ilyosxonovich, K. I., & Oybekovna, E. E. (2022). Changes In Hemodynamics Of The Cardiovascular System In Patients With Fibrosis Alveolitis. Spectrum Journal of Innovation, Reforms and Development, 4, 203-209.

10. Alisherovna, K. M., Baxtiyorovich, Z. M., & Anvarovich, N. J. (2022). To Assess The Condition Of The Myocardium In Patients Chronic Heart Failure On The Background Of Rheumatoid Arthritis. Spectrum Journal of Innovation, Reforms and Development, 4, 210-215.

11. Alisherovna, K. M., Boymamatovna, E. F., Tursunboyevna, I. K., & Mashrabovna, M. M. METABOLIC SYNDROME IN RHEUMATOID ARTHRITIS AS A CRITERION OF CARDIOVASCULAR RISK.

12. Alisherovna, K. M., Erkinovna, K. Z., Davranovna, M. K., & Pulotovna, Z. D. (2022). Positive Effect of Sorbitol in Patients with Chronic Renal Insufficiency. Miasto Przyszłości, 30, 214-217.

13. Alisherovna, K. M., Khabibovna, Y. S., Nizamitdinovich, K. S., & Bakhtiyorovich, U. J. (2023). CYSTATIN and KIDNEY FUNCTION. Journal of new century innovations, 38(2), 220-225.

14. Alisherovna, K. M., Nizamitdinovich, K. S., Davranovna, M. K., & Erkinovna, K. Z. (2022). Kidney Condition in Patients with Myocardial Infarction. Texas Journal of Medical Science, 13, 85-90.

15. Alisherovna, K. M., Sherzodovna, M. D., Tursunboyevna, I. K., & Uktamovna, U. U. (2023). LEFT VENTRICULAR HYPERTROPHY IN PERSONS WITHOUT ARTERIAL HYPERTENSION: PSYCHOSOMATIC APPROACH TO THE STUDY OF THIS PHENOMENON.

16. Alisherovna, K. M., Totlibayevich, Y. S., Davranovna, M. K., & Erkinovna, K. Z. (2022). ASSESSMENT OF THE GENERAL CONDITION AND QUALITY OF LIFE OF WOMEN POST-PRODUCTIVE AGE, WHO SUFFERED FROM COVID-19 ASYMPTOMATICALLY, AND 12 MONTHS AFTER THE MODERATE SEVERE FORM OF THE DISEASE. Spectrum Journal of Innovation, Reforms and Development, 10, 277-282.

17. Alisherovna, M. K. (2021). 24-Hour Abp Monitoring Of Blood Pressure In Patients With Chronic Heart Failure And The State Of Kidney Function. Central Asian Journal of Medical and Natural Science, 2(1), 197-204.

18. Alisherovna, M. K. Stages Of Development Of Renal Dysfunction And Anemia In Patients With Chronic Heart Failure. International Journal of Innovations in Engineering Research and Technology, 8(05), 50-53.

19. Erkinovna, K. Z., Khabibovna, Y. S., & Abrorovna, V. N. (2023). MONITORING OF QUALITY OF LIFE IN PATIENTS WITH ARTERIAL HYPERTENSION OF OLDER AGE GROUPS. Academia Science Repository, 4(5), 276-285.

20. Islamova, K. A. (2022, November). Semizlik bor bemorlarda osteoartroz kasalligining klinik xususiyatlari. In international conferences (Vol. 1, No. 10, pp. 299-301).

21. Islamova, K. A., Olimdjanova, F. J. Q., Ziyadullaev, S. K., & Kamalov, Z. S. (2022). RISK FACTORS FOR EARLY DEVELOPMENT OF OSTEOARTHROSIS.

22. Khabibovna, Y. S., & Abdukodirovna, A. S. (2021). Changes in the diastolic function of the right ventricle in arterial hypertension.

23. Khabibovna, Y. S., Alisherovna, K. M., Nizamitdinovich, K. S., & Totlibayevich, Y. S. (2023). FEATURES OF HEART FAILURE IN PATIENTS WITH THYROTOXICOSIS. Journal of new century innovations, 29(1), 89-97.

24. Khabibovna, Y. S., Alisherovna, K. M., Totlibayevich, Y. S., & Davranovna, M. K. (2023). PAINLESS CARDIAC ISCHEMIA AND RHEUMATOID ARTHRIT. Journal of new century innovations, 29(1), 98-105.

25. Khaydarov, S. N., Khusainova, M. A., Uzokov, J. B., & Makhmudova, K. D. (2023). Heart failure and the risk of hypoglycemia. Science and Education, 4(5), 222-231.

26. Khusainova, M. A. (2023). Comorbidity thyrotoxicosis with coronary heart disease. Science and Education, 4(5), 205-213.

27. Khusainova, M. A. (2023). CYSTATIN C IS AN EARLY MARKER OF DECREASED KIDNEY FUNCTION. Oriental renaissance: Innovative, educational, natural and social sciences, 3(1), 485-490.

28. Khusainova, M. A., Eshmamatova, F. B., Ismoilova, K. T., & Mamadiyorova, M. M. (2023). METABOLIC SYNDROME IN RHEUMATOID ARTHRITIS AS A CRITERION OF CARDIOVASCULAR RISK. Oriental renaissance: Innovative, educational, natural and social sciences, 3(1), 331-339.

29. Khusainova, M. A., Khaydarov, S. N., Makhmudova, K. D., & Nayimov, A. S. (2023). Prevalence of bronchiolitis in patients with Rheumatoid arthritis. Science and Education, 4(5), 232-241.

30. Khusainova, M. A., Khaydarov, S. N., Makhmudova, K. D., & Ortikova, S. X. (2023). Features of prevention of chronic kidney diseases and chronic heart failure. Science and Education, 4(5), 242-250.

31. Khusainova, M. A., Vakhidov, J. J., Khayitov, S. M., & Mamadiyorova, M. M. (2023). Cardiac arrhythmias in patients with rheumatoid arthritis. Science and Education, 4(2), 130-137.

32. Nizamitdinovich, K. S., Alisherovna, K. M., Erkinovna, K. Z., & Davranovna, M. K. (2022). Heart Lesions in Rheumatological Diseases. Texas Journal of Medical Science, 13, 91-94.

33. O'G'Li, F. J. Z., & Akramovna, I. K. (2022). Qandli diabet kasalligi fonida yurak qon tomir tizimi kasalliklarining klinik kechuv xususiyatlari. Talqin va tadqiqotlar ilmiy-uslubiy jurnali, 1(1), 108-111.

34. Zaynobiddin o'g'li, F. J., & Akramovna, I. K. QANDLI DIABET KASALLIGI FONIDA YURAK QON TOMIR TIZIMI KASALLIKLARINING KLINIK KECHUV XUSUSIYATLARI. Talqin va tadqiqotlar, 108.

35. Абдушукурова, К., & Исламова, К. (2023). ВЗАИМОСВЯЗЬ НЕРВНО-ЭНДОКРИННЫХ НАРУШЕНИЙ У БОЛЬНЫХ РЕВМАТОИДНЫМ АРТРИТОМ. International Bulletin of Medical Sciences and Clinical Research, 3(11), 16-20.

36. Исламова, К. А. (2023). Факторы Риска Раннего Развития Остеоартроза. Journal of Science in Medicine and Life, 1(3), 1-7.

37. Исламова, К. А., & Тоиров, Э. С. (2019). EATURES OF CLINICAL CHARACTERISTICS OF OSTEOARTHROSIS ON THE BACKGROUND OF OBESITY. Новый день в медицине, (2), 167-170.

38. Исламова, К. А., & Тоиров, Э. С. (2019). Значение факторов риска на качество жизни больных остеоартрозом. In Актуальные вопросы современной медицинской науки и здравоохранения: сборник статей IV Международной научно-практической конференции молодых учёных и студентов, IV Всероссийского форума медицинских и фармацевтических вузов «За качественное образование»,(Екатеринбург, 10-12 апреля 2019): в 3-х т.-Екатеринбург: УГМУ, CD-ROM.. Федеральное государственное бюджетное образовательное учреждение высшего образования «Уральский государственный медицинский университет» Министерства здравоохранения Российской Федерации.

39. Исламова, К. А., & Хамраева, Н. А. (2023). Факторы Риска И Качество Жизни Больных Остеартрозом. Central Asian Journal of Medical and Natural Science, 4(6), 268-273.

40. Исламова, К., & Карабаева, Г. (2020). ОСОБЕННОСТИ КЛИНИЧЕСКОГО ТЕЧЕНИЯ ЗАБОЛЕВАНИЙ СЕРДЕЧНО-СОСУДИСТОЙ СИСТЕМЫ НА ФОНЕ САХАРНОГО ДИАБЕТА. Журнал кардиореспираторных исследований, 1(3), 59-62.

41. Назаров, Ф. Ю., & Махмудова, Х. Д. (2022). МАТЕМАТИЧЕСКОЕ МОДЕЛИРОВАНИЕ СТЕПЕНИ ТЯЖЕСТИ ВНЕБОЛЬНИЧНЫХ ПНЕВМОНИЙ У ВЗРОСЛЫХ. Oriental renaissance: Innovative, educational, natural and social sciences, 2(Special Issue 4-2), 918-922.

42. Назаров, Ф. Ю., & Махмудова, Х. Д. (2022). Нарушений в состоянии здоровья, в том числе в физическом развитии у молодежи в условиях пандемии COVID-19. Science and Education, 3(12), 264-272.

43. Тоиров, Д. Р., & Махмудова, Х. Д. (2021). ПОДАГРА КАСАЛЛИГИ БИЛАН ОҒРИГАН БЕМОРЛАРДА ЮРАК ҚОН-ТОМИР ЗАРАРЛАНИШЛАРИ. Scientific progress, 2(2), 242-249.

44. Хусаинова, М. А. (2022). OZONETHERAPY IN RESTORATIVE TREATMENT PATIENTS WITH CORONARY HEART DISEASE. Журнал кардиореспираторных исследований, 3(4).