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Peculiarities of Anamnesis and Life Quality in Patients with Atrial Fibrillation

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Abstract.

Atrial fibrillation is a common rhythm disturbance. One of the main parameters being crucial for the choice of tactics of treatment and prevention of complications is the life quality of patients.

The objective of our study was to evaluate this indicator in patients with atrial fibrillation depending on different approaches to treatment. The study involved 254 patients with paroxysmal and persistent forms of atrial fibrillation and 42 practically healthy persons. The main features of anamnesis, presence of comorbidities, aggravating risk factors were studied as well as a survey using "AFEQT Questionnaire" was conducted. When studying the anamnesis it was revealed that patients treated by medications only (the first experimental group) had arterial hypertension as a main presumable cause of atrial fibrillation (92.4%); in one third of cases different forms of coronary artery disease and heart failure were diagnosed (38.6% and 33.3%, respectively). In the fourth group (after left ventricular revascularization) a prevailing cause of atrial fibrillation was coronary heart disease (100%). In the second group (after cardioversion) as well as in the third group (after ablation) the largest proportion of patients was also diagnosed with arterial hypertension – 62.0% and 40.9%, respectively. The mean total AFEQT score among the control group was 82.3±3.1 points. Patients of the first group scored the minimum value among interviewed patients -53.4±4.6 - that was significantly less compared to the control group, $p<0.05$. The total average value of the third group was significantly higher than that in the first group, 69.3±4.6 points against 53.4±4.6 points, respectively, $p<0.05$.

Thus, it was found that the lowest life quality is typical for patients treated with medications only. The patients after ablation have the highest life quality. Left ventricle revascularization slightly improves life quality, but this trend is not statistically significant.

Problem statement and analysis of the recent research

Atrial fibrillation (AF) is one of the most common rhythm disturbances [11]. The main efforts of medical community around the world are aimed at preventing complications of the disease and monitoring clinical signs, however, incapacitation and reduced life quality that often accompany this disease are also important [7]. The development of a reliable tool for assessing the quality of life in these patients would allow us to detect and correct the abnormalities timely. Although currently there is a number of questionnaires and scales a unique common approach to assessment of the entire spectrum of patients' life, their physical performance and mental well-being has not developed yet [4, 10, 13, 14]. Traditionally, the major efforts of clinicians were aimed at reducing morbidity and mortality rates among patients with AF [8, 12]. However, several studies demonstrate the importance of life quality itself. And the effectiveness of many medicaments is increasingly considered in the context of the impact not on specific symptoms, but life quality, which is especially important for elderly patients [3, 5, 8, 9]

The objective of the research was to study the peculiarities of life quality in patients with atrial fibrillation.

Material and methods

The results of the examination of 254 patients with paroxysmal and persistent forms of AF and 42 practically healthy persons (the control group) were analyzed. They were divided into four groups: Group I included 132 persons treated with medications only; Group II included 50 persons who underwent cardioversion; Group III consisted of 22 persons after ablation; Group IV comprised 50 persons after LV revascularization. Patients were selected in accordance with the inclusion criteria: patient's consent and compliance, availability of clinical and instrumental criteria for AF according to the protocol of medical care in the specialty "Cardiology". The exclusion criteria were chronic forms of AF, acute coronary syndromes, inflammatory diseases of the endocardium, endocrine disorders, severe somatic pathology, and cancer.

Both studied groups and the control one were relevant for age and sex. The main portion of patients was distributed through the age groups of "40-55" and "60 and more" years.

The main features of anamnesis, presence of comorbidities, aggravating risk factors were studied as well as a survey using "AFEQT Questionnaire" was conducted [2]. The questionnaire was offered to fill in by all patients before history taking and assessment of patients' condition. It consists of 20 items. The responses are scored from 1 to 7 Likert scale, where questions 1-18 are formed as value judgments (1= "Not at all…" to 7 = "Extremely…"). Questions 19- 21 relate to patients' satisfaction with treatment and are not included in HRQoL score of the AFEQT questionnaire. The AFEQT score was calculated based on the following formula:

$$\text{Overall AFEQT score: } 100 - \frac{(\text{sum of severity for all questions answered} - \text{number of questions answered}) \times 100}{(\text{total number questions answered} \times 6)}$$

The subscale scores were computed similarly to the overall score. There were 3 functional subscales: "Symptoms" – questions 1-4, "Daily activities" – questions5-12 and "Treatment concern" – questions 13-18. Questions 19, 20, and 21 regarding the satisfaction with health care providers and treatment were not included in the overall AFEQT score and were calculated and scored independently. Overall scores ranged from 0 to 100. A score of 0 corresponded to complete disability, while a score of 100 corresponded to the lack of deterioration of quality of life. When assessing the degree of satisfaction the score of "1" reflected complete satisfaction with current treatment.

The scale "EHRA" was used to evaluate the severity of symptoms. Class I indicated the absence of symptoms; Class II pointed to the presence of mild symptoms not affecting normal daily activities; Class III indicated the presence of severe symptoms affecting normal daily activities; Class IV pointed to the presence of disabling symptoms precluding normal daily activities.

The significance of difference between dependent and independent variants was evaluated using Student's t-test; the difference was considered reliable at $p<0.05$. Statistical analysis of the results was performed using a standard software package "Statistica 7.0 for Windows ("Stat Soft", USA) [15].

Results and discussion

Data analysis showed that among patients of the third and fourth research groups there were no people with symptoms that disabled daily activities ("EHRA IV") (Fig. 1). The most people of the first group had severity class "EHRA III" (those with AF undergoing therapy with medicines only), 21.2 %. There were 18.0% and 8.0% of such cases among patients of the second and the fourth groups, respectively. In the third research group (after ablation) there were 4.6% of such cases. It should be noted that the most number of cases with absence of symptoms disabling the daily activities was detected in the third experimental group, 54.6%. At the same time, in the first and second research groups the proportion of such patients was 22.0% and 20.0%, respectively. Thus, we can conclude that the most favorable course of arrhythmia (in terms of impact on daily activities) was observed in the third group, the most unfavorable one was observed in the first and the second groups.

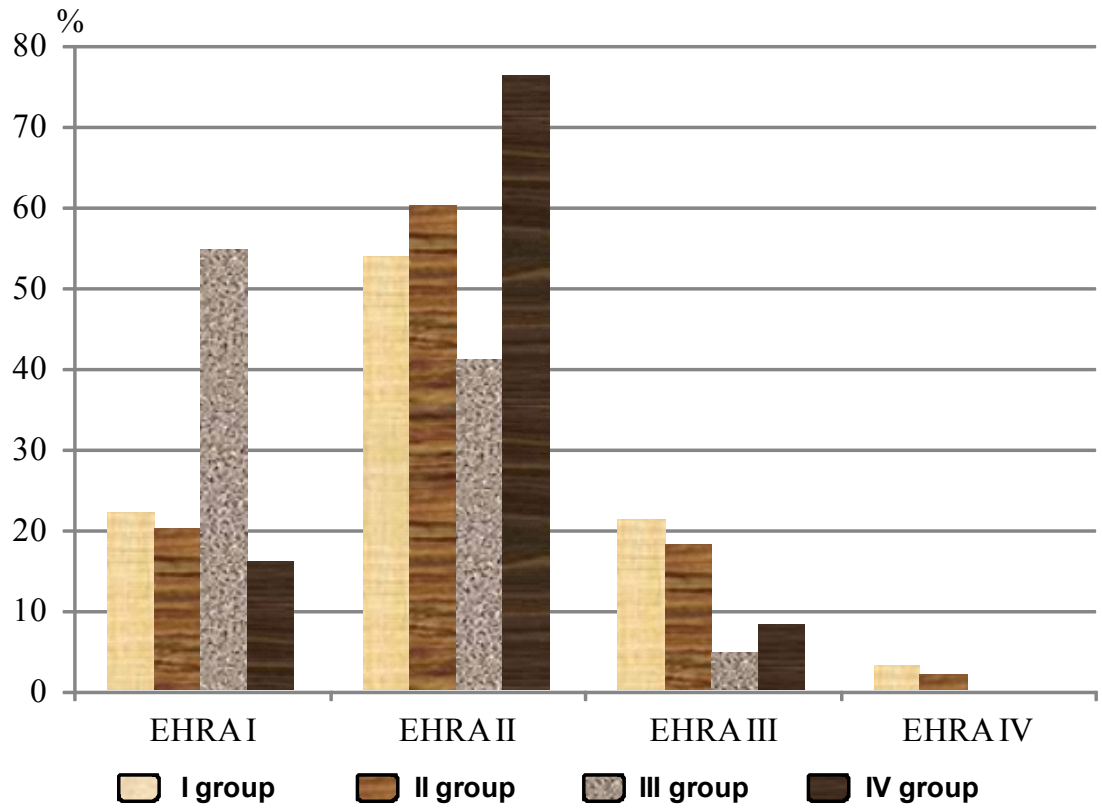

Fig. 1. Distribution of patients according to "EHRA" scale

When studying the anamnesis we revealed the following patterns. The main probable factors related to the development and recurrence of arrhythmia in each research group included several diseases the distribution of which had a different character (Fig. 2). Patients of the first

group had arterial hypertension as a main presumable cause of atrial fibrillation (92.4%); in one third of cases different forms of coronary artery disease and heart failure were diagnosed (38.6% and 33.3%, respectively). In the fourth group a prevailing cause of atrial fibrillation was coronary heart disease (100%). In the second group (after cardioversion) as well as in the third group (after ablation) the largest proportion of patients was also diagnosed with arterial hypertension – 62.0% and 40.9%, respectively. According to the Framingham heart study the most frequent causes of AF included chronic heart failure, myocardial infarction and valvular heart disease (20% in men and 31% women). [6] According to the study "ALFA" the leading cause of AF was hypertension (39.4%). CHD and myocardial disease accounted for 16.6% and 15.3%, respectively [1].

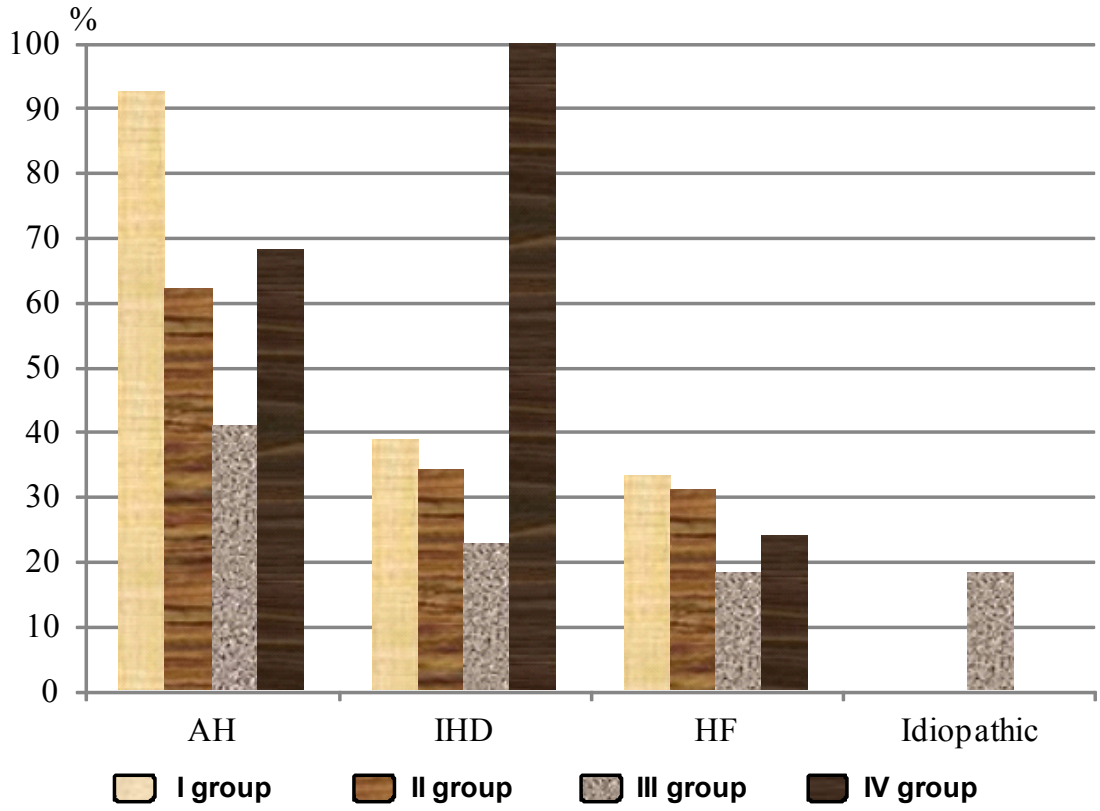

Fig. 2. Distribution of patients according to probable leading causes of AF

When analyzing complications we stated that cerebral blood flow disorders were most often diagnosed in the first group (19.7%) (patients treated by medications only). Among patients with AF who underwent LV revascularization (the fourth group) more than 10 % had previous stroke or TIA. It should be noted that among the second research group only 4.0% of such cases were detected and among the third one there was no patients with such a disease. Bleeding was most often observed in patients of the first group, 20.5%. Unfortunately, there was no data whether it was clinically significant; however, it was obviously associated with the use of anticoagulants. No cases of bleeding were reported for patients of the third group. Single cases occurred in the fourth group. One of the severest complications – pulmonary thromboembolism – occurred in 13.6% of patients of the first group, 2.0% and 4.6% of patients of the second and third groups, respectively. It was diagnosed in 6.0% of cases among persons of the fourth group.

When analyzing the impact of stress factors (self-assessment from "0" to "10" points), we found that the significant impact of stress ("5-7" points) was indicated by 56.8% of patients of the first group, 58.0% of patients of the second group and 50.0% of patients of the fourth groups. About 60.0% of respondents of the third group assessed stress as moderate ("1-4" points). 30.0% of

respondents of the control group reported the absence of stress. The majority of the control group reported a moderate stress ("1-4" points). The absence of stress was reported by 12.9% of patients of the first group and 4.0% of patients of the second group; 13.6% patients of the third group and 6.0% of patients of the fourth group. Severe stress ("7-10" points) was reported by 4.6% of respondents of the third group, 6.0% of patients of the fourth group, 8.3% of patients of the first group and 14.0% of patients of the second group. There were no individuals with severe stress in the control group.

While analyzing weekly physical activity, which was rated as the number of days of moderate physical activity a week it was revealed the following. It should be noted that among patients of almost all groups persons with low physical activity (1-2 active days/week) prevailed. Thus, there were 65.9% and 70.0% of patients with such activity in the first and fourth groups, respectively. More than half of these persons were present in the second group (52.0%). The largest number of patients with moderate weekly activity (active 3-4 days/week) was in the third group (after ablation).

Some of these trends were also confirmed while assessing the life quality (Table 1). First of all it is necessary to note that there was a significant difference in the mean total score of the questionnaire between study groups. The mean total AFEQT score among the control group was 82.3±3.1 points. Patients of the first group scored the minimum value among interviewed patients - 53.4±4.6 - that was significantly less compared to the control group, $p<0.05$. The total average value of the third group was significantly higher than that in the first group, 69.3±4.6 points against 53.4±4.6 points, respectively, $p<0.05$.

Table 1

Distribution of patients with AF according to "AFEQT" scores (M±m).

Parameters, points	Control group (n=42)	Research groups (n=254)			
		I (n=132)	II (n=50)	III (n=22)	IV (n=50)
Overall score	82.3±3.1	53.4±4.6*	59.6±4.2*	69.3±4.6*¶	56.3±3.9*
Symptoms	80.1±3.9	58.4±4.5	57.6±3.4*	77.6±4.8	62.5±3.6
Treatment concern	-	56.5±3.9	61.3±3.6	72.5±4.2	60.3±4.1
Daily activities	89.3±2.9	51.3±3.6*	54.2±3.4*	63.3±3.4*¶	57.3±3.3*
Treatment satisfaction	-	49.8±4.0	55.3±3.0	70.9±3.7¶	61.2±4.1

Notes:

1. the average values for groups are indicated;
2. *- SD between the control group and research groups, $p<0.05$;
3. ¶ - SD between the first and other research groups, $p<0.05$.

When considering the symptoms subscale, the worst score according to the survey was typical for patients of the first and the second groups. The lowest rate of symptoms was observed in persons of the third group (after ablation). Persons of the fourth group (after LV revascularization) showed the intermediate score in the subscale. It should be noted that the symptoms of arrhythmia had the least impact on daily activities in patients of the third group. Their average value was

63.3±3.4 points. In the first group and the second group these value were 51.3±3.6 and 54.2±3.4 points, respectively. The difference in the data between the first and the third groups was statistically significant, $p<0.05$.

The values for subscale "Treatment satisfaction" were also characteristic. Patients of the first group were the least satisfied with treatment. The maximum score for this subscale in this group ranged within 49.8±4.0 points. Patients of the second and fourth groups were moderately satisfied with the progress and results of treatment. Their values were 55.3±3.0 and 61.2±4.1 points, respectively. The best results were specific for the respondents of the third group whose average score in this subscale was 70.9±3.7 points being significantly higher than the value of the first group, $p<0.05$.

Conclusions

Thus, it was found that the lowest life quality as well as a high incidence of complications is typical for patients treated with medications only. Left ventricle revascularization slightly improves life quality, but this trend is not statistically significant and requires further researches. These individuals have also a high incidence of stroke. Patients after ablation have the highest life quality. They are characterized by the lowest rate of symptoms and moderate physical activity.

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