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## CLINICAL AND FUNCTIONAL CHARACTERISTICS OF ATRIAL FIBRILLATION IN PATIENTS WITH AND WITHOUT ISCHEMIC HEART DISEASE

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### ABSTRACT

This article examines atrial fibrillation (AF) in patients with and without ischemic heart disease (IHD), focusing on their clinical and laboratory-instrumental characteristics. The study assessed anthropometric parameters (sex, age, weight, height, body mass index), AF types, primary and comorbid diagnoses, echocardiographic data (ejection fraction), lipid profile and biochemical markers (ALT, AST, total cholesterol, LDL), scores on the CHA<sub>2</sub>DS<sub>2</sub>-VASc and HAS-BLED scales, as well as data on surgeries and prescribed pharmacotherapy. The results indicate that patients with IHD more frequently present with persistent forms of AF, endomorphic body type, signs of endogenous obesity, consistently accompanying arterial hypertension, elevated CHA<sub>2</sub>DS<sub>2</sub>-VASc and HAS-BLED risk scores, and are prescribed a higher average number of medications, reflecting a more complex overall clinical status and requiring more meticulous long-term clinical supervision and careful adjustment of therapy according to dynamic patient risk profiles. The identified differences between groups highlight the necessity of a comprehensive and individualized approach to the diagnosis and treatment of atrial fibrillation, particularly in patients with ischemic heart disease.

**Key words:** atrial fibrillation; coronary artery disease; arterial hypertension; hypercholesterolemia; hemorrhage; thrombosis.

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### 1. INTRODUCTION

Atrial fibrillation (AF) has long ceased to be solely a cardiological concern. Today, it represents a significant challenge for the entire healthcare system, particularly in the context of an aging population and the increasing prevalence of chronic diseases. AF has become an integral part of the clinical profile of patients with arterial hypertension, ischemic heart disease (IHD), or heart failure. However, the condition also often arises outside typical clinical scenarios-sometimes in the context of seemingly complete health-which makes the identification of risk factors particularly relevant.

Despite the abundance of international data, local features such as ethnic specificity, disease patterns, and lifestyle remain poorly studied. This study focuses on individuals residing in Kazakhstan, representing various ethnic backgrounds.

We encounter a unique combination of factors: high prevalence of hypertension, IHD, and obesity, combined with variable access to healthcare and diagnostic resources. This creates an epidemiological picture that significantly differs from Western populations [1].

According to systematic reviews, from the 1980s to the

2010s, the global prevalence of AF has increased considerably, particularly in people over the age of 65 [2]. A similar trend is observed in the Republic of Kazakhstan. In an epidemiological study covering the city of Almaty and Almaty region (Southern Kazakhstan), the prevalence of AF among adults was 3.3% [3].

Given the growing burden of chronic diseases such as hypertension, IHD, obesity, and diabetes, further increases in AF prevalence are expected. In Northern Kazakhstan, particularly in Akmola Region, the incidence rates of IHD and hypertension among the urban population are among the highest in the country: IHD – approximately 3,771 cases per 100,000 population, and hypertension – 2,624 per 100,000 [4]. These figures suggest that AF prevalence in this region is likely not lower than in the south.

AF often develops against a background of significant structural heart disease. The most important risk factors remain hypertension, IHD, chronic heart failure, cardiomyopathies, and inflammatory myocardial diseases. According to national data, IHD is diagnosed in over 80% of hospitalized patients with AF [5], highlighting the importance of investigating its contribution to arrhythmogenesis. In addition to

clinical factors, a genetic predisposition to AF has also been established, including the influence of single nucleotide polymorphisms involved in atrial electrical remodeling.

Given the high clinical significance of AF and its rising prevalence, the study of risk factors in specific population groups becomes increasingly relevant. Identifying clinical and epidemiological patterns in the Kazakhstani population-including comparisons between patients with and without IHD-may aid in more accurate prediction of AF development and in forming effective primary and secondary prevention strategies.

**Objective.** To substantiate the need for timely monitoring of patients with early or late post-infarction conditions, as well as those with angina pectoris, for the identification of various arrhythmogenic conditions. The main aim of the study is to identify and comparatively analyze the clinical and functional characteristics of atrial fibrillation (AF) in patients with and without ischemic heart disease (IHD), based on clinical, laboratory, and instrumental data.

## 2. MATERIALS AND METHODS

This observational study included 45 consecutive patients with confirmed atrial fibrillation (AF), enrolled between [September 2025] and [November 2025]. Patients were stratified according to coronary angiography (CAG) findings into two groups: those with ischemic heart disease (IHD, 53%) and those without IHD (47%).

Inclusion criteria were: age  $\geq 18$  years, confirmed AF, and availability of complete clinical, echocardiographic, and biochemical data. Exclusion criteria included prior myocardial infarction, significant valvular heart disease, congenital heart defects, or previous cardiac surgery. Previously, patients were not examined for other articles and projects for the period September 2025 to November 2025. All participants underwent:

Transthoracic echocardiography (TTE) to assess left ventricular ejection fraction (LVEF) and chamber dimensions,

24-hour Holter monitoring to evaluate arrhythmia characteristics,

Biochemical marker testing, including [ALT, AST, LDL],

Assessment of clinical signs of chronic heart failure (CHF).

Given the exploratory design of the study, no adjustment for multiple comparisons was applied; therefore, the results should be interpreted with caution. Echocardiographic assessment and Holter monitoring were performed in accordance with the 2020 European Society of Cardiology (ESC) Guidelines. The study protocol was approved by the Local Ethics Committee of the National Emergency Medicine Coordination Center, Astana, Kazakhstan, and written informed consent was obtained from all participants.

### 2.1. Sample collection and preparation

The study included 45 adult patients with confirmed atrial fibrillation (AF). Participants were stratified into two groups based on coronary angiography (CAG) findings: patients with ischemic heart disease (IHD, 53%) and those without IHD (47%). All patients underwent standard clinical evaluation, including assessment of chronic heart failure (CHF) symptoms.

Venous blood samples were collected in the morning after an overnight fast using standard vacuum tubes. Blood for biochemical analysis was centrifuged at 3000 rpm for 10 minutes to obtain serum. Samples were analyzed immediately or stored at  $-20^{\circ}\text{C}$  for no longer than 48 hours until testing. Anthropometric data (sex, age, height, weight, BMI) were recorded at the time of enrollment.

Transthoracic echocardiography was performed using commercially available ultrasound systems following European Society of Cardiology (ESC) recommendations [ESC Guidelines, 2020]. Parameters included left ventricular ejection fraction, chamber dimensions, and structural abnormalities. All patients also underwent 24-hour Holter monitoring according to standard methodological guidelines, including assessment of AF type, burden, heart rate variability, and arrhythmic events. The study protocol was approved by the Local Ethics Committee of the National Emergency Medicine Coordination Center (Astana, Kazakhstan). Written informed consent was obtained from all participants prior to inclusion.

### 2.2. Biochemical analysis and statistics

Biochemical tests included measurement of alanine aminotransferase (ALT), aspartate aminotransferase (AST), total cholesterol, and low-density lipoprotein cholesterol (LDL). Analyses were performed using automated enzymatic colorimetric methods on standard certified analyzers in accordance with the manufacturer's protocols. All assays followed internationally accepted clinical laboratory procedures.

Statistical analysis was performed using SPSS Statistics version 26.0 (IBM Corp., USA). Continuous variables were tested for normality using the Shapiro–Wilk test. Normally distributed data were presented as mean  $\pm$  standard deviation (SD) and compared using the independent-samples t-test. Non-normally distributed variables were presented as median with interquartile range (IQR) and compared using the Mann–Whitney U-test. Categorical variables were compared using the  $\chi^2$  test or Fisher's exact test when appropriate. Correlation analysis was performed using Pearson or Spearman coefficients depending on data distribution. A p-value  $< 0.05$  was considered statistically significant.

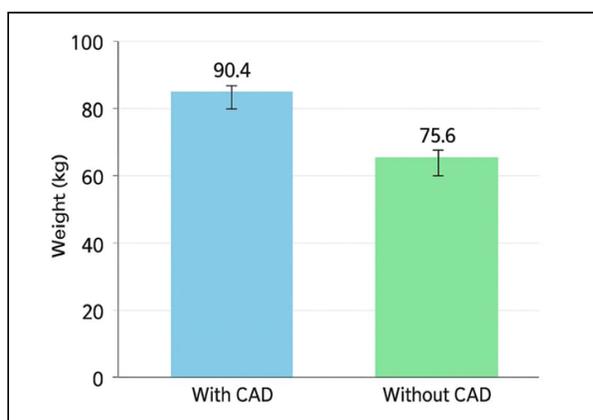
## RESULTS

The study included 45 patients with atrial fibrillation (AF), of whom 21 (46%) had confirmed ischemic heart disease (IHD), while 24 (53%) showed no signs of IHD.

The mean age of patients with IHD was  $64.1 \pm 5.43$  years, which did not differ statistically from the age of patients without IHD ( $64 \pm 6.4$  years,  $p = 0.23$ ). Gender distribution was comparable between groups: in the non-IHD group, 58.3% were female and 41.7% male; in the IHD group, 38.1% were female and 61.9% male ( $p = 0.65$ ). Fisher's exact test indicated no statistically significant gender difference.

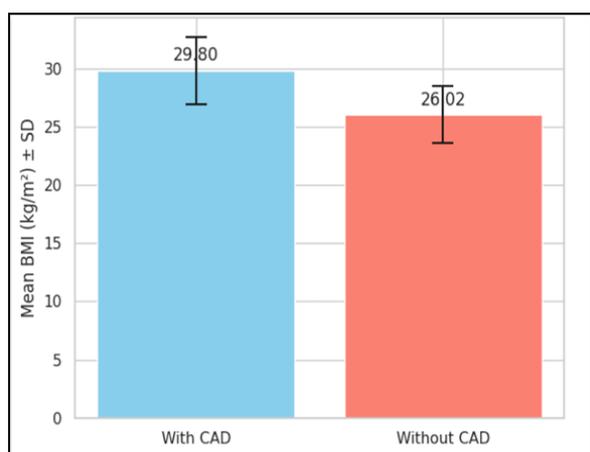
The average weight in the IHD group was  $90.4 \pm 8.45$  kg, compared to  $75.6 \pm 7.7$  kg in the non-IHD group. A two-tailed t-test showed this difference was statistically significant ( $p = 0.01$ ) (Figure 1).

Mean height was  $173.8 \pm 5.6$  cm in the IHD group and  $170.2 \pm 6.08$  cm in the non-IHD group. This difference was not statistically significant ( $p = 0.84$ ).



**Figure 1** – Bar chart with standard deviation of patients' weight with and without CAD.

Body mass index (BMI) averaged  $29.8 \pm 2.9$  kg/m<sup>2</sup> in the IHD group and  $26.02 \pm 2.44$  kg/m<sup>2</sup> in the non-IHD group. Although the visual difference was apparent, statistical evaluation using a two-tailed t-test yielded  $p = 0.08$ , suggesting a trend toward significance. These findings support the notion that atherogenic processes contributing to IHD may also promote arrhythmogenesis via structural and electrophysiological cardiac remodeling [6] (Figure 2).



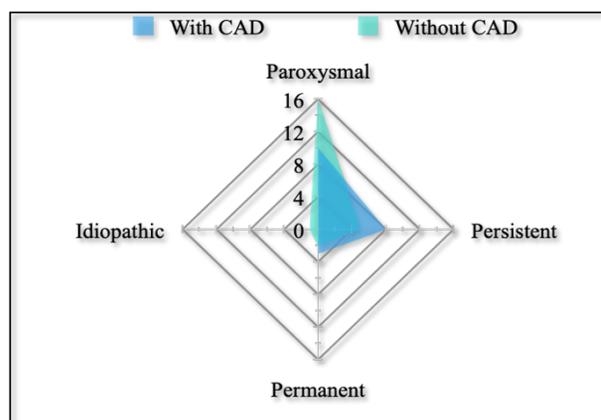
**Figure 2** – Bar chart with standard deviation of BMI in patients with and without CAD.

Among patients with IHD, the paroxysmal form of AF predominated (48%,  $n = 10$ ), followed by the persistent form (38%,  $n = 8$ ) and the permanent form (14%,  $n = 3$ ). In the non-IHD group, paroxysmal AF was also frequent (67%,  $n = 16$ ), followed by persistent (21%,  $n = 5$ ) and permanent (8%,  $n = 2$ ) forms. These distributions suggest a potential association between the chronic course of AF and the presence of IHD (Figure 3).

Differences in AF form distribution between groups did not reach statistical significance (Fisher's exact test,  $p = 0.255$ ), yet a possible trend indicates that more sustained arrhythmia forms may be linked to IHD [7].

This difference was not statistically significant ( $p = 0.25$ ), indicating no meaningful variation in LVEF between groups within this sample.

Biochemical analysis showed significantly higher alanine aminotransferase (ALT) levels in the IHD group ( $35.86 \pm 11.27$  U/L) compared to the non-IHD group ( $24.67 \pm 7.78$



**Figure 3** – Radar chart of the four form of atrial fibrillation in patients with and without CAD.

U/L;  $p = 0.01$ ).

Aspartate aminotransferase (AST) levels were also elevated in the IHD group ( $33.12 \pm 6.3$  U/L) versus the non-IHD group ( $24.9 \pm 4.27$  U/L), with strong statistical significance ( $p = 0.001$ ).

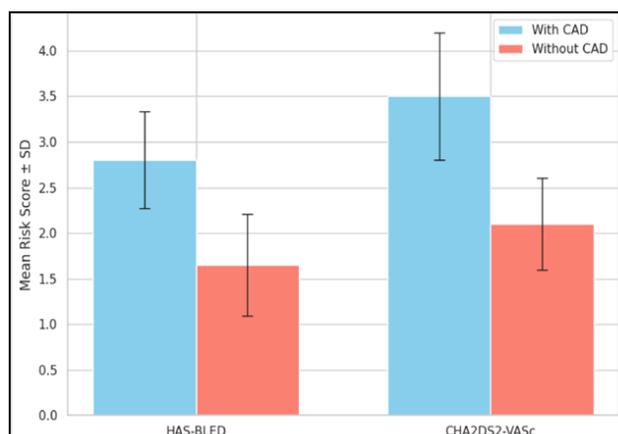
Mean CHA<sub>2</sub>DS<sub>2</sub>-VASc score in the IHD group was  $4.8 \pm 0.77$ , significantly higher than in the non-IHD group ( $2.6 \pm 0.93$ ;  $p = 0.0024$ ), indicating a notably elevated stroke risk among patients with IHD.

Bleeding risk assessed by the HAS-BLED scale was also higher in patients with IHD- $2.80 \pm 0.53$  versus  $1.65 \pm 0.56$  in the non-IHD group, reaching statistical significance alongside CHA<sub>2</sub>DS<sub>2</sub>-VASc differences ( $p = 0.0090$ ) (Figures 4–5).

The mean total cholesterol level in patients without ischemic heart disease was  $4.74 \pm 0.65$  mmol/L, whereas in the IHD group it was significantly higher at  $5.65 \pm 0.70$  mmol/L ( $p = 0.012$ ).

Low-density lipoprotein (LDL) levels were also elevated in the IHD group ( $3.60 \pm 0.69$  mmol/L) compared to the non-IHD group ( $2.94 \pm 0.69$  mmol/L), with statistically significant differences ( $p = 0.04$ ).

Analysis of comorbidities in patients with atrial fibrillation revealed marked differences depending on the presence of ischemic heart disease. Among the IHD group, 8 out of 21 patients (38%) suffered from obesity grades 1–3, and 12 out of 21 (57%) were overweight, underscoring a high prevalence



**Figure 4** – Risk according to CHA<sub>2</sub>DS<sub>2</sub>-VASc and HAS-BLED scores in patients with and without CAD.

of metabolic disorders in this cohort. Thyroid gland disorders were present in 3 patients (14%). Arterial hypertension was observed in all IHD patients (21/21, 100%), indicating substantial cardiovascular burden.

In the non-IHD group, obesity was significantly less common-only 4 of 24 patients (19%) and overweight status was present in 10 of 24 patients (42%). However, hypertension was observed more frequently here than expected-15 out of 24 patients (63%). Diabetes mellitus was identified in two patients (8%), and no thyroid disease cases were recorded.

Thus, patients with IHD more frequently experience obesity and arterial hypertension, suggesting these comorbid risk factors play a significant role in the pathogenesis of arrhythmia and necessitate a more comprehensive and individualized therapeutic approach. Meanwhile, in patients without IHD, arterial hypertension remains the primary risk factor despite a lower prevalence of obesity, affirming its strong arrhythmogenic potential as an independent diagnosis (Figure 5).

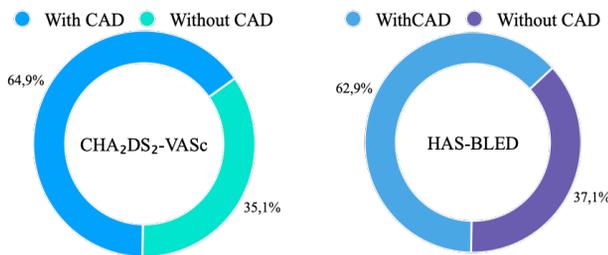


Figure 5. Pie charts of CHA<sub>2</sub>DS<sub>2</sub>-VASc and HAS-BLED risk scores.

Figure 5 – Pie charts of CHA<sub>2</sub>DS<sub>2</sub>-VASc and HAS-BLED risk scores.

Both groups exhibited various comorbid and background diagnoses; however, the number of prescribed antihypertensive drugs remained substantial (Figure 6-7).

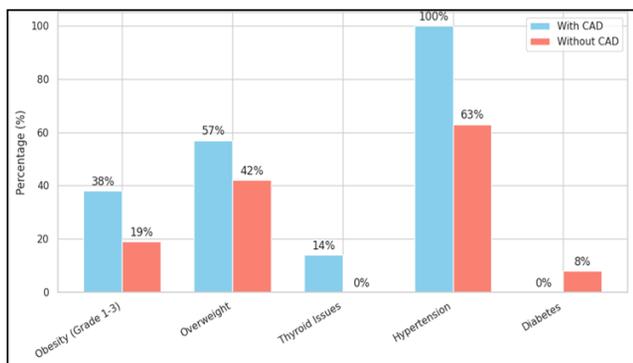


Figure 6 – Comparison of disease prevalence in groups with and without CAD.

Beta-blockers were prescribed to all patients with IHD-21 prescriptions for 21 patients (100%)-reflecting their frequent use, possibly including combination dosages or multiple prescriptions per patient. In contrast, beta-blockers were prescribed less frequently in the non-IHD group-7 prescriptions for 24 patients (~29%). This aligns with clinical guidelines, where beta-blockers are key agents for IHD patients. These findings corroborate European sources and clinical protocols (RK/AHA/ACC) emphasizing that beta-blockers stabilize cardiac electrical activity, thereby reducing AF risk [8].

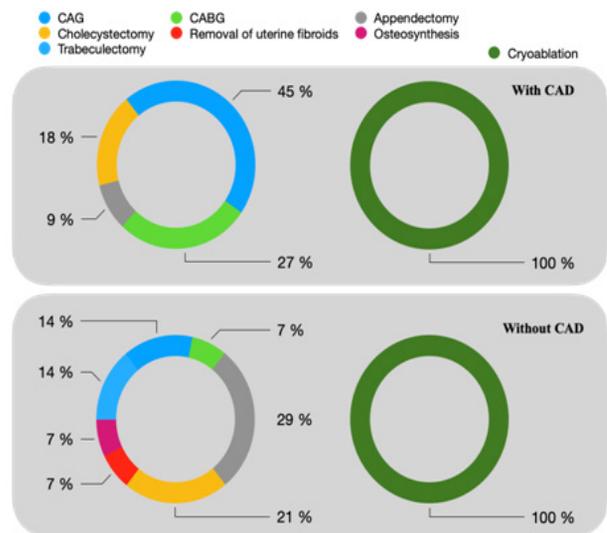


Figure 7 – Donut chart of types of surgeries in patients with and without CAD.

ACE inhibitors/ARBs were used in 13 patients with CAD (62%) and 9 patients without CAD (37%). Their more frequent use in the non-CAD group is associated with the widespread adoption of clinical protocols in the Republic of Kazakhstan for treating arterial hypertension.

Anticoagulants were prescribed to 21 of 21 patients with CAD (100%) and 24 of 24 patients without CAD (100%). Thus, the relative frequency of anticoagulant use is identical, justified by the risk of thromboembolic complications inherent to this pathology and the postoperative period following cryoablation.

Statins were prescribed to all 21 patients in the CAD group, whereas only 4 of 24 patients without CAD received them, reflecting secondary prevention aimed at reducing recurrence of the atherogenic process. Antiplatelet agents were administered only to patients with CAD (6 prescriptions), consistent with their role in secondary prevention of atherothrombosis.

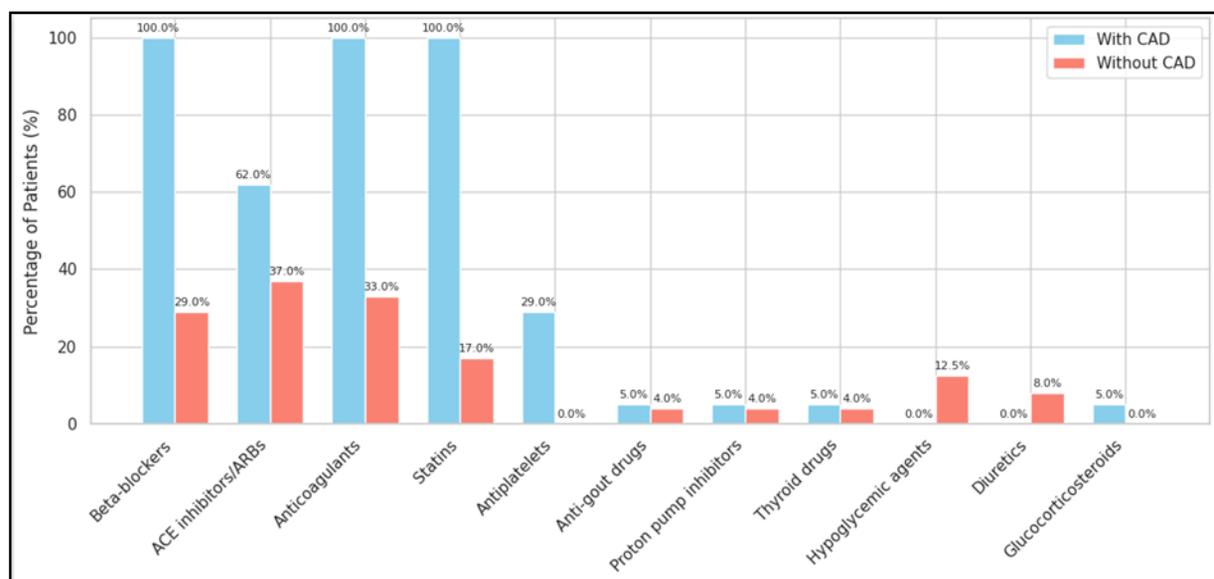
All 45 patients in both groups underwent cryoablation, as well as surgical interventions according to diagnoses (Figure 6-7). Correlating surgical data with the medication table revealed that glycosides and antiarrhythmics were prescribed exclusively to the CAD group, justified by reduced ejection fraction (due to coronary artery disease) and postoperative period specifics [9].

In the CAD group, prescriptions included antigout drugs, proton pump inhibitors, thyroid medications, hypoglycemic agents, diuretics, and glucocorticosteroids, reflecting comorbidities (Figure 8).

Frequency of medication prescriptions in groups with and without CAD. The average number of medications per patient was significantly higher among CAD patients-5 drugs versus 2 in the non-CAD group-indicating pronounced polypharmacy and multimorbidity (Table 1).

## DISCUSSION

This study analyzed a cohort of patients with atrial fibrillation (AF), subdivided into groups with and without coronary artery disease (CAD).



**Figure 8** – Frequency of medication prescription in patients with and without ischemic heart disease (IHD).

**Table 1** – Medication selection in patients with and without ischemic heart disease.

Drug Group	CAD (n=21)	No CAD (n=24)
Beta-blockers	21	7
ACE inhibitors ARBs	13	9
Calcium Channel Blockers	4	3
Anticoagulants	21	24
Antiplatelets	6	0
Glycosides	0	1
Statins	21	4
Antiarrhythmics	0	2
Anti-gout Drug	1	0
Glucocorticosteroids (GCS)	1	0
Proton Pump Inhibitors (PPI)	2	0
Diuretics	0	2
Hypoglycemic Agents	0	3
Thyroid Drugs	1	1
Average Number of Drugs per Patient	4.79	2.86

Age and gender distributions showed no statistically significant differences, confirming demographic comparability. Anthropometric parameters-weight, height, and body mass index (BMI)-also did not differ significantly; however, patients with CAD tended toward higher BMI ( $p = 0.10$ ), which may reflect the role of excess body weight as a risk factor for arrhythmias in this patient category. Literature reports obesity increases arrhythmia risk by 20–30% [10].

Persistent AF was more frequent in CAD patients (60%) compared to the non-CAD group (18.2%), whereas paroxysmal AF predominated in patients without CAD (81.8% vs. 40%). Although these differences did not reach statistical significance ( $p = 0.099$ ), the trend suggests more severe AF forms and chronicity associated with CAD presence.

Left ventricular ejection fraction (LVEF) was comparable between groups, though a trend toward reduced LVEF in CAD patients was noted ( $p = 0.062$ ), possibly indicating ischemia’s impact on systolic cardiac function.

Biochemical blood analysis revealed significantly elevated liver transaminase levels in CAD patients compared to non-CAD (ALT  $p = 0.01$ ; AST  $p = 0.001$ ), statistically significant differences. Elevated transaminases in CAD patients may be explained by several pathophysiological mechanisms:

Cardiac origin of AST, as aspartate aminotransferase is abundant in cardiomyocytes, released upon myocardial ischemia (including unstable angina and infarction). Ischemic liver injury: reduced cardiac output and venous congestion in heart failure impair hepatic perfusion, leading to “ischemic hepatitis” with elevations of both AST and ALT.

Metabolic syndrome and hepatic steatosis: CAD are often accompanied by obesity, insulin resistance, and hyperlipidemia, promoting non-alcoholic fatty liver disease (NAFLD), characterized by moderate transaminase elevation, especially ALT. Drug effects: CAD patients often receive multiple medications (statins, antiplatelets, beta-blockers, etc.), some of which may cause drug-induced liver injury, also elevating transaminases [11].

The average CHA<sub>2</sub>DS<sub>2</sub>-VASc stroke risk score was higher in the CAD group ( $p = 0.0024$ ), while bleeding risk per HAS-BLED was also significant ( $p = 0.0090$ ); nonetheless, both groups reflected severe clinical conditions and elevated complication risks [12].

Lipid profiles were worse in CAD patients, demonstrating hyperlipidemia, with statistically significant differences in total cholesterol ( $p = 0.012$ ) and low-density lipoprotein cholesterol (LDL-C) ( $p = 0.04$ ), confirming the atherosclerotic nature of CAD associated with lipid metabolism disturbances [13].

Discussion of the four main and most commonly used drugs in the two patient groups (beta-blockers, calcium channel blockers, ACE inhibitors, anticoagulants, antiplatelets, statins, glycosides). Beta-blockers were prescribed to 100% of CAD patients, consistent with therapy guidelines. This class reduces heart rate and myocardial oxygen demand, also lowering AF risk by mitigating excessive sympathetic activity that contributes to arrhythmogenic myocardial remodeling, the most common arrhythmia in CAD patients. This is criti-

cal for preventing arrhythmic events and ischemic episodes.

Anticoagulants were prescribed to 100% of patients in both groups, aligning with the fact that CAD increases AF risk by reducing effective atrial output, significantly increasing thrombus formation risk in the left atrium and potential systemic embolism. Thus, anticoagulant therapy is secondary stroke prevention in patients with CAD and AF. In non-CAD patients, this is justified by the prophylactic postoperative period following cryoablation.

ACE inhibitors/ARBs were more frequently used in CAD patients (~62% vs. ~37%), in accordance with guidelines for treating arterial hypertension, a principal etiological form of hypertension. Antiplatelet agents were prescribed to only ~28% of CAD patients, raising concern since they are mandatory for secondary prevention barring contraindications.

Statins were prescribed to all CAD patients (21/21), while only 4 of 24 non-CAD patients received statins, reflecting the high atherogenic risk in established CAD. The study is limited by its small sample size, single-center design, and the fact that all patients underwent cryoablation, which may limit generalizability. Some differences were descriptive due to non-significant p-values.

Overall, the observed differences in biochemical markers, risk scores, and medication use emphasize the need for an individualized approach in managing AF in patients with IHD. Trends in AF types and BMI, although not statistically significant, suggest directions for future research and warrant careful clinical monitoring. But, several results did not reach statistical significance and are therefore reported descriptively. In particular, the distribution of atrial fibrillation subtypes, differences in body mass index, and variations in left ventricular ejection fraction should be interpreted as preliminary observations rather than evidence of clinically or pathophysiologically meaningful associations. Accordingly, the conclusions of this study are based exclusively on statistically significant findings, while non-significant results are presented to provide contextual information and to support hypothesis generation for future research.

#### CONTRIBUTION OF THE AUTHORS

Conceptualization, M.K, K.A; formal analysis, M.K, K.A, A.A, Z.S; resources, K.A; preparation of original draft, M.K, K.A; and writing review and editing, M.K;. All authors have read and agreed with the published version of the manuscript.

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#### CONFLICT OF INTEREST.

The authors declare that they have no conflicts of interest.

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## КЛИНИКО-ФУНКЦИОНАЛЬНЫЕ ОСОБЕННОСТИ ФИБРИЛЛЯЦИИ ПРЕДСЕРДИЙ У ПАЦИЕНТОВ С ИШЕМИЧЕСКОЙ БОЛЕЗНЬЮ СЕРДЦА И БЕЗ НЕЕ

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### АБСТРАКТ

В данной статье рассматривается фибрилляция предсердий (ФП) у пациентов с ишемической болезнью сердца (ИБС) и без нее, уделяя особое внимание их клиническим и лабораторно-инструментальным характеристикам. В исследовании оценивали антропометрические параметры (пол, возраст, вес, рост, индекс массы тела), типы ФП, первичные и коморбидные диагнозы, эхокардиографические данные (фракция выброса), липидный профиль и биохимические маркеры (АЛТ, АСТ, общий холестерин, ЛПНП), баллы по шкалам CHA<sub>2</sub>DS<sub>2</sub>-VASc и HAS-BLED, а также данные об операциях и назначенной фармакотерапии. Полученные результаты свидетельствуют о том, что у пациентов с ИБС чаще наблюдаются персистирующие формы ФП, эндоморфный тип телосложения, признаки эндогенного ожирения, постоянно сопровождающие артериальную гипертензию, повышенные показатели риска CHA<sub>2</sub>DS<sub>2</sub>-VASc и HAS-BLED, а также назначается более высокое среднее количество лекарственных средств, что отражает более сложный общий клинический статус и требует более тщательного долгосрочного клинического наблюдения и тщательной коррекции терапии в соответствии с динамическими профилями риска пациента. Выявленные различия между группами подчеркивают необходимость комплексного и индивидуализированного подхода к диагностике и лечению фибрилляции предсердий, особенно у пациентов с ишемической болезнью сердца.

**Ключевые слова:** фибрилляция предсердий; ишемическая болезнь сердца; артериальная гипертензия; гиперхолестеринемия; кровоизлияние; тромбоз.

## ЖҮРЕКТІҢ ИШЕМИЯЛЫҚ АУРУЫ БАР ЖӘНЕ ОНСЫЗ НАУҚАСТАРДАҒЫ ЖҮРЕКШЕ ФИБРИЛЛЯЦИЯСЫНЫҢ КЛИНИКАЛЫҚ ЖӘНЕ ФУНКЦИОНАЛДЫҚ ЕРЕКШЕЛІКТЕРІ

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### ТҮЙІН

Бұл мақалада жүректің ишемиялық ауруы (ЖИА) бар және онсыз науқастардағы жүрекше фибрилляциясы (ЖФ) клиникалық, зертханалық және аспаптық сипаттамаларына назар аударып қарастырылады. Зерттеуде антропометриялық параметрлер (жынысы, жасы, салмағы, бойы, дене салмағының индексі), ЖЖ түрлері, бастапқы және қатар жүретін диагноздар, эхокардиографиялық деректер (эжекция фракциясы), липидтік профиль және биохимиялық маркерлер (АЛТ, АСТ, жалпы холестерин, LDL), CHA<sub>2</sub>DS<sub>2</sub>-VASc және HAS-BLED ұпайлары, сондай-ақ хирургиялық араласулар мен тағайындалған фармакотерапия туралы деректер бағаланды. Алынған нәтижелер коронарлық артерия ауруы бар науқастарда ЖЖ-ның тұрақты түрлері, эндоморфты дене типі, артериялық гипертензиямен үнемі қатар жүретін эндогенді семіздік белгілері, CHA<sub>2</sub>DS<sub>2</sub>-VASc және HAS-BLED қауіп ұпайларының жоғарылауы және оларға орташа дәрі-дәрмектердің жоғары саны тағайындалатынын көрсетеді, бұл жалпы клиникалық жағдайдың күрделілігін көрсетеді және пациенттің динамикалық қауіп профилдеріне сәйкес мұқият ұзақ мерзімді клиникалық бақылауды және терапияны мұқият түзетуді талап етеді. Топтар арасында анықталған айырмашылықтар жүрекше фибрилляциясын диагностикалау мен емдеуге, әсіресе коронарлық артерия ауруы бар науқастарда кешенді және жеке тәсілдің қажеттілігін көрсетеді.

**Кілт сөздер:** жүрекше фибрилляциясы, коронарлық артерия ауруы, артериялық гипертензия, гиперхолестеринемия, қан кету, тромбоз.