

# Therapy in the Prevention of Thromboembolic Complications in Patients with Atrial Fibrillation: Prospects for Higher Appointment of New Oral Anticoagulants in Clinical Practice

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**Abstract:** Objective: To analyze the assignability of anticoagulation in patients with atrial fibrillation (including new oral anticoagulants (NOAC)) and detection of paroxysmal supraventricular tachycardia (SVT), according to a cohort study conducted on the rules of the local registry. Methods: Patients with atrial fibrillation, selected from 526 patients treated in the department in 2013, accounted study group (n = 58). Analysis of prescribed therapy, the percentage of anticoagulant therapy (including the new oral anticoagulants), detection of SVT held on all enrolled patients. Results: use of anticoagulants in the study group was 46.5% (NOAC - 20.7%). The main reason fails to appoint anticoagulant therapy were follows: the inability of the patient to adhere or to monitor warfarin therapy and the presence of valvular AF, which does not allow to recommend NOAC (48.4%) and physician preference, based on the refusal or the patient's preference (41.9%). The presence of valvular AF significantly limited the possibility of appointing the NOAC. SVT has been registered by Holter ECG during hospitalization in 24 patients with AF. Moreover 12 patients without AF were previously identified SVT. Conclusions: The appointment of anticoagulants in patients with AF is insufficient. More active use of NOAC will allow to correct current situation. The correct interpretation of the concept of valvular AF can help it. Considering that under the mask of paroxysmal SVT described by Holter ECG may be hiding paroxysmal AF, open to debate is the question of the appointment of anticoagulant therapy in these patients. Answer this question will be able to conduct of specially-designed randomized clinical trials.

**Keywords:** Atrial Fibrillation, New Oral Anticoagulants, Reasons for Not Prescribing Anticoagulants, Paroxysmal Supraventricular Tachycardia

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## 1. Introduction

Atrial fibrillation (AF) is the most common heart rhythm disorder according to the American College of Cardiology Foundation (ACCF), American Heart Association (AHA) Task Force on Practice Guidelines, and European Society of Cardiology (ESC) 2011 practice guidelines, AF is defined as “a supraventricular tachyarrhythmia that is characterized by uncoordinated atrial activation with consequent deterioration of mechanical function.” The diagnosis of AF is based on history and clinical examination and confirmed by ECG recording [1].

AF is considered an epidemic disease. Perhaps the prevalence of AF will increase significantly in the next few decades due to the increasing proportion of older people in the general population, which in turn caused an increase in the birth rate and significant improvement in the quality of healthcare. Prediction results obtained in a cross-sectional ATRIA study, in which 17 974 adult patients participated in California who have been diagnosed with AF in 1996-1997 indicate that the number of Americans with atrial fibrillation will increase to 5.6 million in numbers (2.5 fold) for the next 50 years [2].

Analysis carried out on the basis of the Mayo Clinic Data,

using Poisson estimates for AF incidence rate in the Olmsted county in the period between 1980 and 2000, showed that the estimated number of adults with AF in 2050 may reach 15.9 million (3-fold increase compared to 2000), if sustained further growth of the incidence of AF [3]. Nevertheless, even these projections may be relatively modest in relation to the existence of "silent AF" [4].

The social significance of this disease causes a serious of its complications such as cerebral stroke. The basis of therapy to impact on the prognosis of patients with AF is anticoagulation. The real practice of prescribing drugs of this group covers a much smaller contingent of patients in need of it.

## 2. Objective

To analyze the assignability of anticoagulation in patients with atrial fibrillation (including new oral anticoagulants (NOAC)) and detection of paroxysmal supraventricular tachycardia (SVT), according to a cohort study conducted on the rules of the local registry.

## 3. Methods

In the present study included all patients who were hospitalized in the Department of Cardiology and Internal Diseases of the United hospital with Outpatient department in 2013. Formation of the cohort study was conducted on the rules of formation of the registry. Detailed methodology of it was described in previous publications [5, 6]. This registry studied the management of patients with atrial fibrillation, was named the Registry Of Cardiology department (ROC 2013). They were selected all patients with cardiac arrhythmias, among them - patients with AF. Analysis of the prescribing of oral anticoagulants, the reasons fails the appointment for these drugs and detection of paroxysmal supraventricular tachycardia, (as the adjacent to AF rhythm disorder), held on all enrolled patients.

58 patients with a diagnosis of AF were included in the final analysis. Among them, paroxysmal AF was diagnosed in 37 patients (63.79% of cases) and permanent form of AF in 21 patients (36.21%). The frequency of anticoagulant therapy (ACT) in patients with atrial fibrillation was 46.55% (27 patients): warfarin - 22.4%, NOAC - 20.7%. The use of antiplatelet agents was 60.3%. The main reason fails to appoint anticoagulant therapy were follows: the inability of the patient to adhere or to monitor warfarin therapy and the presence of valvular AF, which does not allow to recommend NOAC (48.4%) and physician preference, based on the refusal or the patient's preference (41.9%). The presence of valvular AF significantly limited the possibility of appointing the NOAC in patients who are unable to adhere or to monitor warfarin therapy.

Given that the complexity of the differentiation of paroxysmal SVT and AF often arise, additional analysis was conducted of Holter ECG monitoring (HECGM) data in our study. At least one paroxysm of SVT has been registered during the daily monitoring conducted during hospitalization

in 24 patients with atrial fibrillation. In this period 12 patients were treated in the department who have figured in the final diagnosis of the diagnosis of paroxysmal SVT. During the HECGM was recorded at least one paroxysm of CBT in 11 of them. Ten of these patients received antiplatelet therapy (AAT) in connection with concomitant coronary heart disease. Do not forget that atrial fibrillation is inherently a supraventricular arrhythmia. This means that under the guise of runs SVT described with HECGM, may be hiding paroxysmal AF / or atrial flutter.

Thus, if we consider the subgroup of patients as a possible candidate for the appointment of the ACT in our study, and compare them with a group of patients with AF, the situation with the appointment of the ACT change, that is presented in Table 1.

**Table 1.** Comparison of anticoagulant therapy in patients with AF in the group and the forecast anticoagulant therapy in patients in the AF +SVT.

Patient's group	AF	AF + SVT
Number of patients in the final analysis	58	70
Application ACT	46.55% (27)	38.57% (27)
Warfarin	22.41% (13)	18.57% (13)
Asenokumarol	1.72% (1)	1.43% (1)
Dabigatran	12.07% (7)	10.00% (7)
Rivaroxaban	5.2% (3)	4.29% (3)
Apixaban	3.44% (2)	2.86% (2)
Nadroparin	1.72% (1)	1.43% (1)
The use of NOAC	20.69% (12)	17.14% (12)
ACT + AAT	12.07% (7)	10.00% (7)
The use of antiplatelet therapy (AAT)	60.34% (35)	64.29% (45)
ASA	56.90% (33)	61.43% (43)
ASA + clopidogrel	1.72% (1)	1.43% (1)
Clopidogrel	1.72% (1)	1.43% (1)
Without ACT and AAT	5.17% (3)	4.29% (3)

## 4. Discussion

Problems of inadequate prescription of drugs with proven effect for the patient's prognosis, which in the aspect of the problem of atrial fibrillation are oral anticoagulants, are relevant not only for our country.

Similar data have been published on the results of a major american registry ORBIT-AF [7], which have been named main reasons for don't are oral anticoagulants was following: physician preference (47.7%); refusal or patient preference (21.1%); bleeding episode took place (20.2%); frequent falls / weakness (10.8%); high risk of bleeding (9.8%); the inability of the patient to adhere to treatment or control its (4.7%). Similar reasons fails to appoint anticoagulant therapy have been found previously in prior european publications devoted to this problem [8, 9].

At the same time it is worth noting that the problems of the appointment of oral anticoagulants may be much broader than we imagine it. Despite the fact that there is evidence in favor of an increased risk of ischemic stroke in patients with long-term (over 30 seconds) SVT paroxysms registered during HECGM [10], the presence of SVT in distinct from AF is not an indication for anticoagulant therapy according to existing guidelines. In addition, surveillance of Binici Z. and

colleagues suggest that the increased supraventricular activity, namely the SVT "runs" more than 20 complexes are predictive of the development of AF [11]. As mentioned above, given that under the guise of SVT runs, described by HECGM may be hiding paroxysmal AF or atrial flutter open to debate is the question of the appointment of anticoagulant therapy in these patients.

In addition, it is necessary to underline the importance of limitation when the NOAC are not assigned if the atrial fibrillation is regarded as valvular - if there is any change of the heart valves. But understanding a term of valvular AF was laid down in the basic clinical studies of NOAC where it has been concretized. Namely, valvular AF in the RELY study was regarded as prosthetic heart valves requiring anticoagulation per se, or hemodynamically relevant valve disease that is expected to require surgical intervention during the course of the study [12]. Valvular AF in Rocket AF study was regarded as significant mitral stenosis [13]. And in Aristotle study valvular AF was regarded as moderate or severe mitral stenosis, and other conditions in addition to atrial fibrillation, which require receiving anticoagulants, namely, prosthetic heart valves [14].

Thus, only the presence of severe mitral stenosis or the presence of prosthetic heart valves are the criteria for valvular atrial fibrillation. Therefore, the use of NOAC in atrial fibrillation and other valvular pathology is possible.

## 5. Conclusions

We can conclude insufficient assignability of anticoagulation in patients with AF. In our study, we noted the presence of similar reasons fails to appoint the anticoagulants, as in foreign studies [7-9], and obtained the percentage of appointment of the anticoagulants in patients with AF, corresponding to the latest European AF registries [15].

The real alternative to warfarin are the NOAC. Increasing the use of NOAC in real practice can improve the situation. The correct interpretation of the concept of valvular AF can help it.

Considering that under the mask of paroxysmal SVT described by Holter ECG may be hiding paroxysmal AF, open to debate is the question of the appointment of anticoagulant therapy in these patients. Answer this question will be able to conduct of specially-designed randomized clinical trials.

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