

# Anticoagulant Treatment of Atrial Fibrillation: Uses and Habits of Cardiologists

## *Tratamiento anticoagulante de la fibrilación auricular: usos y hábitos de los cardiólogos*

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### ABSTRACT

**Background:** Anticoagulant treatment (ACT) is one of the pillars of stroke prevention.

**Objectives:** The aim of this study was to know the habits of ACT initiation, difficulties in its continuity and in the incorporation of new oral anticoagulants (NOA), and to analyze medical conducts.

**Method:** The study consisted of a closed survey including 107 cardiologists.

**Results:** At ACT initiation 52.3% of cardiologists adopted a decision with the patient. Several problems were acknowledged for its continuity, and 85% of cardiologists chose economic cost as a difficulty to incorporate NOA. In high risk patients and AF of unknown onset, 83.2% of cardiologists chose ACT and heart rate control, in low risk patients with paroxysmal AF, 54.2% opted for follow-up and in patients at high risk of embolism and bleeding, 75.7% decided for ACT.

**Conclusions:** The study showed a trend to involve the patient at the beginning of ACT, and multiple difficulties to sustain it. The use of NOA is conditioned by economic cost. Medical conducts were consistent with the guidelines.

**Key words:** Atrial fibrillation - Anticoagulants/therapeutic use -Cardiology - Life Style

### RESUMEN

**Introducción:** El tratamiento anticoagulante (TACO) es uno de los pilares en la prevención del accidente cerebrovascular.

**Objetivos:** Conocer los hábitos de inicio del TACO, las dificultades en su continuidad y la incorporación de nuevos anticoagulantes orales (NAO). Analizar las conductas médicas.

**Material y Métodos:** Encuesta cerrada a 107 cardiólogos.

**Resultados:** En el inicio del TACO, el 52,3% adoptó una decisión con el paciente. Fueron reconocidos diversos inconvenientes para su continuidad y el 85% eligió al costo como la dificultad para incorporar NAO. En pacientes de alto riesgo y FA de tiempo incierto, el 83,2% eligió TACO y control de frecuencia cardíaca. En pacientes de bajo riesgo con FA paroxística, el 54,2% optó por el seguimiento. En pacientes con alto riesgo embolígeno y de sangrado, el 75,7% decidió TACO.

**Conclusiones:** Se observó una tendencia a dar participación al paciente en el inicio del TACO y múltiples dificultades para sostenerlo. El precio de los NAO condiciona su uso. Las conductas médicas fueron concordantes con lo que indican las guías.

**Palabras clave:** Fibrilación auricular - Anticoagulantes/uso terapéutico - Cardiología - Estilo de vida

### INTRODUCTION

Atrial fibrillation (AF) is associated with a five-fold increased risk of suffering a stroke, (1) and is present in one third of patients who have an ischemic stroke. (2)

Anticoagulant treatment (ACT) decreases the risk of stroke by more than 60% and is useful in both primary and secondary prevention, with an absolute risk reduction of 2.7% and 8.4% per year, respectively. (3, 4) However, the optimal implementation of ACT presents difficulties that cause underuse of this therapeutic resource. (5)

This study analyzes the results of a closed survey

aimed at clinical cardiologists from the Greater Buenos Aires district, designed with the following objectives: 1- to know the ACT initiation habits of these professionals and the difficulties they notice for its continuity and for the incorporation of new oral anticoagulant drugs (NOA), 2- to analyze medical conducts before hypothetical clinical cases that represent situations of frequent medical consultation.

### METHODS

Among a total of 600 cardiologists living in the Northern Greater Buenos Aires who were recruited from a database,

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107 answered the survey they had received by email. Median age of participants was 52 years (range: 28-72 years, with 25th and 75th percentile of 37 and 60 years, respectively) and 37 were women (34.6%).

Fifty physicians (46.7%) worked in private institutions and the rest in public institutions, or both.

A closed survey of 6 questions was used, with 4 response options each. The first 3 questions were of opinion about the uses or habits and the next 3 inquired about the medical conduct in hypothetical cases based on daily clinical practice (Tables 1 and 2).

### Statistical analysis

Nominal variables are reported as percentages. The chi-

square test was used to compare proportions. Percent concordance was estimated from the answers chosen in the three questions of medical conduct, considering as correct the choice that was in accordance with the 2015 AF SAC guideline recommendations. (6)

### Ethical considerations

The cardiologists who answered the survey belong to the Northern Suburban district of the Argentine Society of Cardiology and were invited to participate voluntarily and anonymously by email. The cases referred to in the second part of the survey raise clinical situations of frequent consultation in outpatient cardiology. Since they are not "real cases," it was not necessary to request any consent from patients.

**Question 1.** You decide to start anticoagulant treatment in your patient with atrial fibrillation (AF). What option do you choose?

- Refer your patient to the hematologist
- Start anticoagulation with vitamin K antagonists (acenocoumarol or warfarin)
- Start anticoagulation with new oral anticoagulants (NOA)
- Explain the options to your patient and then decide jointly

**Question 2.** Among the following options, which one represents the major inconvenience to sustain anticoagulant treatment in your patients?

- The low reliability of laboratory controls
- The low possibility of patients to perform periodic controls
- The lack of patient medical coverage (social or prepaid medical coverage)
- The potential adverse effects of treatment

**Question 3.** Which of the following factors most often represents an impediment to the use of NOA in your patient with AF?

- Cost of treatment
- Lack of medical coverage of your patient
- Lack of evidence of its use compared with traditional anticoagulants
- Presence of comorbidities (chronic kidney failure)

**Table 1.** Anticoagulation management in patients with atrial fibrillation.

First part of the survey answered by 107 cardiologists of the Greater Buenos Aires.

**Case 1.** A 75-year-old man with a history of controlled, asymptomatic hypertension, without signs and symptoms of heart failure, presents to the consultation with an ECG that reveals atrial fibrillation (AF) of unknown onset with 120 bpm ventricular response. The CHAD2DS2-VASC score is 3.

You decide:

- Oral antiplatelet therapy (ASA) and heart rate control
- Anticoagulation and heart rate control
- Pharmacological reversion
- Referral for hospitalization, study and heparinization

**Case 2.** A 50-year-old patient without coronary risk factors or structural heart disease, CHA2DS2VASC score zero, has paroxysmal AF episodes. You decide:

- Oral anticoagulation with vitamin K antagonists
- NOA anticoagulation
- Antiplatelet therapy with ASA and clopidogrel
- Follow-up without drug treatment

**Case 3.** A 68-year-old hypertensive patient presents with history of transient ischemic attack, a CHAD2DS2-VASC score of 4 and HAS-BLED score of 3. You must decide on the onset of oral anticoagulants for permanent AF:

- Start vitamin K antagonists or NOA
- Initiate antiplatelet therapy (ASA) and heart rate control
- Start dual antiplatelet therapy (ASA and clopidogrel)
- Start heart rate control only

**Table 2.** Medical conduct referred to hypothetical clinical cases.

Second part of the survey answered by 107 cardiologists of the Greater Buenos Aires.

## RESULTS

### Anticoagulant therapy initiation

This question was oriented to know, once ACT has been decided, which is the chosen starting option. In 52.3% (n=56) of cases the respondents preferred to give intervention to the patient in the election. This behavior was independent of the type of institution in which the physician worked (public: 54% vs. private: 50.8%, p = NS and the professional's age (60 years or less 46.6% vs. ≥61 years 54.5%, p=NS, 75th percentile of the sample).

The rest of the choices showed the following distribution: referral to the hematologist: 29.9% (n=32); prescription of new oral anticoagulants: 12.1% (n=13); and prescription of vitamin K antagonists: 5.6% (n=6).

### Maintenance of anticoagulant therapy

In the question about the problems that arise to continue ACT, the answers were the following: small possibility of carrying out periodic controls: 37.4% (n=40); lack of medical coverage: 29.9% (n=32); potential adverse effects of therapy: 24.3% (n=26); and low reliability of laboratory controls: 8.4% (n=9).

### Difficulties for the incorporation of new therapies

Regarding the difficulties in incorporating NOA therapy, cost was the excluding opinion in 85% (n=91) of physicians, followed, with a much lower percentage, by lack of social or prepaid medical coverage in 8.4% (n = 9), the existence of comorbidities in 3.7% (n=4), and lack of evidence in favor of the use of these drugs in 2.8% (n=3) of respondents.

### Hypothetical Clinical Cases

#### Case 1. Patient with AF of unknown onset and high embolic risk

The hypothetical case of a 75-year-old male patient, hypertensive, with AF of unknown onset, good hemodynamic tolerance and CHA<sub>2</sub>DS<sub>2</sub>VASC score for high-risk of embolism was considered. In 83.2% of cases (n=89) physicians chose to perform anticoagulation and heart rate control. The rest of the options were distributed as follows: referral for hospitalization, study and heparinization: 13% (n=14); pharmacological reversion: 1.9% (n=2); and oral antiplatelet therapy (ASA) and heart rate control: 1.9% (n=2).

#### Case 2. Patient with paroxysmal AF and low embolic risk

The hypothetical case of a patient at low embolic risk, with CHA<sub>2</sub>DS<sub>2</sub>VASC score zero and with episodes of AF was presented.

In 54.2% of cases (n=58) doctors opted for follow-up without ACT; 39.3% (n=42) was in favor of anticoagulation, 26.2% (n=28) with NOA and 13.1% (n=14) with vitamin K antagonists. The rest of the respondents, 6.5% (n=7) opted for dual antiplatelet therapy.

#### Case 3. Patient with AF, high risk of embolism and simultaneous bleeding

In this hypothetical patient with CHA<sub>2</sub>DS<sub>2</sub>VASC score 4 and HAS-BLED score 3, 75.7% (n=81) of cardiologists opted to start some type of ACT. The remaining choices were initiation of dual antiplatelet therapy (ASA and clopidogrel): 12.1% (n=13); start of antiplatelet therapy (ASA) and heart rate control: 9.3% (n=10); and initiation of heart rate control only: 2.8% (n=3).

### Percent concordance estimation

The 107 cardiologists surveyed answered the three questions of the second part. Among a total of 321 responses, 228 were in accordance with the 2015 AF SAC guidelines, which determines an estimated percent concordance of 71%.

## DISCUSSION

Our work addressed the issue of anticoagulant treatment in AF, focused on the opinion of cardiologists. Regarding treatment initiation, there is a marked tendency to involve the patient in the choice of therapeutic options.

Those cardiologists who decided to start ACT, prescribed NOA more frequently, in a 2: 1 ratio with respect to vitamin K antagonists. This conduct has been favored by the advantage of achieving faster anticoagulation at a standard dose with the new drugs. Less than a third of cardiologists indicated referral to the hematologist, which is the traditional attitude.

In relation to the inconveniences to sustain the continuity of ACT, the most frequently chosen was the difficulty to carry out periodic controls. From a survey carried out in the USA, Leung et al. concluded that the main reason why cardiologists indicate NOA is the reduction of periodic controls. (7)

The cost of NOA was identified as a practice limitation in 85% of our respondents; one strategy would be its use in the groups that would benefit most from this therapy. Among them would be those patients who, for distance reasons, do not have access to periodic coagulation controls, as well as those who fail to achieve with the traditional drugs a time in therapeutic range greater than 65-70% for INR, or patients at higher risk of intracranial bleeding. (8, 9)

In case 1, the priority is to start ACT to avoid the risk of stroke. It does not merit hospitalization and feasibility of a programmed electrical reversal would be evaluated later on.

The hypothetical case of the patient with paroxysmal AF, without structural heart disease and low embolic risk (case 2) caused greater disparity of opinion, with almost 40% of cardiologists choosing anticoagulation, despite a CHA<sub>2</sub>DS<sub>2</sub>VASC score of zero. The guidelines recommend that anticoagulation should be performed based on the embolic risk determined by the CHA<sub>2</sub>DS<sub>2</sub>VASC score, regardless of the type of AF. This has been established on the basis of studies that indicate

equivalent stroke risk and bleeding for paroxysmal, permanent and persistent AF. (10, 11)

However, the management of paroxysmal AF is currently a matter of controversy, since anticoagulation could be indicated if the denominated “atrial fibrillation burden” is considered as an independent risk factor. (12, 13)

The global discrimination power of stroke risk scores in AF is modest; the c-statistic for the CHA<sub>2</sub>DS<sub>2</sub>-VASc score was 0.606 (0.513-0.699). (14) It is likely that variables not included in this score, such as arrhythmic load, contribute to adopting an anticoagulation conduct in an individual patient.

In the third case, in which high embolic and bleeding risk converge, the net benefit favors ACT. The high HAS-BLED score leads to further investigation of the case seeking to reverse the modifiable causes of bleeding, but does not contraindicate anticoagulation. The use of acetylsalicylic acid and dual antiplatelet therapy provide the protection granted by ACT against embolic risk. (15)

We estimated the percent concordance based on the answers that coincide with the content of our guidelines. The percentage found seems good, even when it was influenced by the anticoagulation conduct that some cardiologists maintained in the case of paroxysmal AF with a low risk score.

#### Study limitations

The results obtained refer to the opinion of a sample of cardiologists from the Greater Buenos Aires and may not reflect the reality of other regions of our country. On the other hand, since it is a closed questionnaire, it is possible that there are other opinions not included in the answer menu. In relation to the percent concordance calculated from only three hypothetical clinical cases, its variation is magnified by either concordant or not concordant response with the content of the guidelines.

#### CONCLUSIONS

The cardiologists surveyed showed an attitude prone to patient participation in the mode of initiation of anticoagulant therapy. Multiple causes represent inconveniences for treatment continuity and the cost of the new oral anticoagulants conditions their use. Medical conducts were consistent with our guidelines, with a tendency to over-treatment in the low-risk group.

#### Conflicts of interest

None declared.

(See authors' conflicts of interest forms on the website/ Supplementary material).

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