Effectiveness of Oral Anticoagulation in Nonvalvular Atrial Fibrillation According to CHA_2DS_2-VASc Score in Patients With Low-Moderate Embolic Risk

Efectividad de la anticoagulación oral en la fibrilación auricular no valvular según el score CHA_2DS_2-VASc en pacientes con riesgo embólico bajo-intermedio

To the Editor,

The recent clinical practice guidelines of the European Society of Cardiology for the management of atrial fibrillation[1] have introduced a new scoring scheme for embolic risk stratification, CHA_2DS_2-VASc, which assigns 1 point to congestive heart failure (or left ventricular dysfunction), hypertension, diabetes, age of 65 to 74 years, female sex, and vascular disease (previous infarction, peripheral arterial disease or aortic atheroma) and 2 points to a history of previous stroke/transient ischemic attack/thromboembolism or age $\geq$ 75 years. These guidelines recommend that the patients with low to moderate risk ($CHADS_2$ score of 0-1) should be stratified according to the new scheme and, if their score is greater than or equal to 2, should receive oral anticoagulation (OAC) therapy; if it is 1, they can be treated with OAC (preferred option) or acetylsalicylic acid, and if it is 0, with acetylsalicylic acid or receive no antithrombotic therapy (preferred option).

Our objective is to evaluate the efficacy of OAC according to the CHA_2DS_2-VASc score in a cohort of patients in routine clinical practice with nonvalvular atrial fibrillation (NVAF) and a $CHADS_2$ score of 0 to 1. Between 1 February 2000 and 31 July 2003, all the consecutive patients with permanent NVAF treated in 2 cardiology offices were followed prospectively, and the development of stroke (acute neurological deficit of more than 24 hours' duration, with compatible neuroimaging findings and confirmed by a neurologist), peripheral embolism and/or major bleeding (requiring transfusion or hospital admission), and mortality were recorded. OAC therapy was prescribed according to a protocol based on the current recommendations of the scientific societies.[2,3] In each patient, we investigated the presence of cardioembolic risk factors (CERF)—advanced age ($\geq$75 years), hypertension, diabetes mellitus, previous cardioembolic event, ischemic heart disease, heart failure, left atrial dilatation, and left ventricular dysfunction—and absolute contraindications to OAC. Demographic and baseline clinical data were also recorded. For the patients without CERF or with an absolute contraindication to anticoagulation therapy, treatment with acetylsalicylic acid or antiplatelet agents or no antithrombotic therapy was prescribed. Those with no absolute contraindications were offered OAC if they had 2 or more CERF; if they had only one CERF the decision was left to the attending cardiologist. The $CHADS_2$ and CHA_2DS_2-VASc scores were calculated using the data from the initial visit. All the variables necessary for their estimation had been collected prospectively in the initial protocol, except for peripheral arterial disease and aortic atheroma, which were obtained retrospectively from the review of the medical records. In the present analysis, we included all the subjects with a $CHADS_2$ score of 0-1, 352 patients in all (mean age, 70 $\pm$ 8 years; 51% men). OAC therapy was prescribed for 234 patients (66%) and of the remainder 106 (90%) received antiplatelet agents. The CHA_2DS_2-VASc score was 0 in 14 patients (4%), 1 in 73 (21%) and 2 or higher in 265 (75%). After a follow-up period of 2.4 $\pm$ 1.9 years (889 patient-years of observation; only 3 patients were lost to follow-up), there were 8 cases of stroke, none of peripheral embolism, 9 of severe hemorrhage and 20 deaths. For CHA_2DS_2-VASc scores of 2 or higher, we found a significantly lower rate of embolic events and overall mortality in anticoagulated patients than in the rest of the series, with no significant differences in the incidence of severe hemorrhage or in the mortality rate (Table 1).

Although the guidelines regard the prescription of OAC in patients with a CHA_2DS_2-VASc score of 1 or higher to be supported by level A evidence (data from multiple randomized clinical trials or meta-analyses), to the best of our knowledge not a single trial has evaluated this score in the context of a comparison between OAC and antiplatelet agents. The only articles that report the incidence of embolic events in patients with NVAF and a CHA_2DS_2-VASc score of 1 or higher are the product of 2 studies, one of them observational and based on the cohort of the EuroHeart Survey for Atrial Fibrillation in nonanticoagulated patients,[4] and the other a *post hoc* analysis of the anticoagulated patients[5] included in 2 clinical trials that compared OAC and ximelagatran. In the first of these reports, the authors observed 1 embolic event in 164 nonanticoagulated patients over a 1-year follow-up period (0.6/100 patient-years); in the second, there were 3 events over 653 patient-years in a group of anticoagulated patients (0.46/100 patient-years), but the incidence of hemorrhage was not reported.

Table 1
Incidence of Events in Anticoagulated and Nonanticoagulated Patients in our Series According to the Embolic Risk, Evaluated by Means of the CHA2DS2-VASc Score

	Entire series	With anticoagulation	Without anticoagulation	*P*
Ischemic stroke				
CHA_2DS_2-VASc = 0	0/36 (0)	0/16 (0)	0/20 (0)	.99
CHA_2DS_2-VASc = 1	0/164 (0)	0/80 (0)	0/84 (0)	.99
CHA_2DS_2-VASc $\geq$ 2	8/689 (1.16)	3/514 (0.61)	5/175 (2.99)	.03
Total	8/889 (0.90)	3/610 (0.49)	5/279 (1.79)	.12
Severe hemorrhage				
CHA_2DS_2-VASc = 0	0/36 (0)	0/16 (0)	0/20 (0)	.99
CHA_2DS_2-VASc = 1	1/164 (0.59)	0/80 (0)	1/84 (1.32)	.99
CHA_2DS_2-VASc $\geq$ 2	8/689 (1.16)	7/514 (1.43)	1/175 (0.6)	.69
Total	9/889 (1.01)	7/610 (1.15)	2/279 (0.72)	.73
Overall mortality				
CHA_2DS_2-VASc = 0	0/36 (0)	0/16 (0)	0/20 (0)	.99
CHA_2DS_2-VASc = 1	2/164 (1.22)	0/80 (0)	2/84 (2.38)	.5
CHA_2DS_2-VASc $\geq$ 2	18/689 (2.61)	7/514 (1.36)	11/175 (6.29)	.001
Total	20/889 (2.25)	7/610 (1.15)	13/279 (4.66)	.002

Data expressed as no./No (%): number of patients with at least one of the events referred to in the study/total number of patient-years of observation in each subgroup (incidence of events per 100 patient-years).

Our results, even with the limitation of the small number of patients, confirm the benefits of OAC in patients in routine clinical practice with NVAF and a CHA_2DS_2-VASc score of 2 or higher, but not in those with a CHA_2DS_2-VASc score of 1. In our opinion, the benefit of anticoagulation therapy in the latter group is questionable and, in any case, small.

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High Risk Anomalous Origin of the Right Coronary Artery

Variante maligna del origen de la coronaria derecha

To the Editor,

We present the case of a 31-year-old female native of Colombia, with no cardiovascular risk factors or relevant medical history, who was referred to a cardiologist for oppressive chest pain on effort of possible coronary origin and of 5 years of evolution. On physical examination there were no pathological findings of interest. ECG showed a sinus rhythm of 50 bpm, without repolarization alterations; chest X-ray was normal; transthoracic echocardiogram showed a normal sized left ventricle with preserved function, without any changes in general and segmental contractility. A maximum stress test was performed according to the Bruce protocol, which resulted in positive clinical signs and negative electrical signs for ischemic heart disease.

With these findings and given the patient's low risk of ischemic heart disease, a cardiac computed tomography (CT) angiography was requested. This is a non invasive anatomical imaging study which makes it possible to assess the coronary arteries and

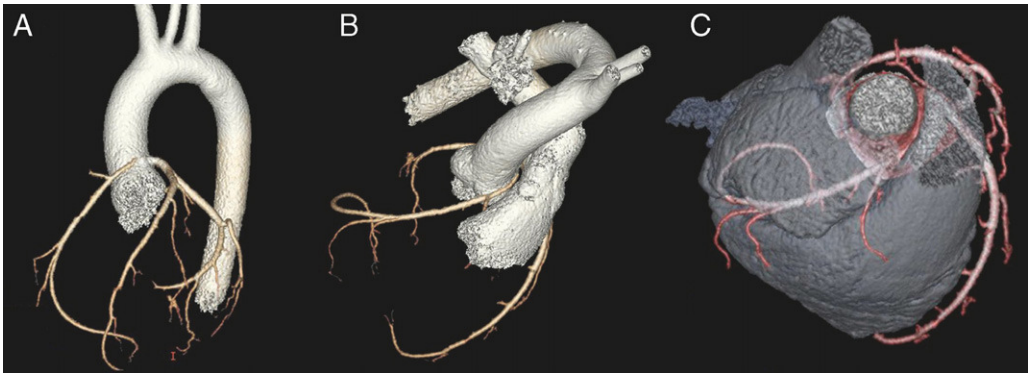

Figure 1. 64-slice coronary computed tomography (prospective acquisition) with volume reconstruction: an anomalous right coronary artery arising from the left sinus of Valsalva, decreased caliber and interarterial course.

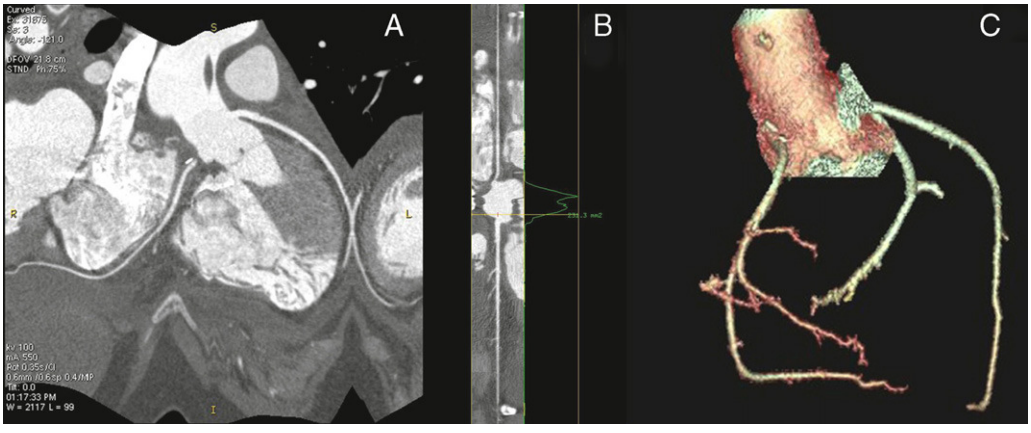

Figure 2. Right coronary artery reimplanted in the non-coronary sinus, without residual stenosis.