

Differences in the Characteristics and Management of Patients With Atrial Fibrillation Followed-up by Cardiologists and Other Specialists



Diferencias en las características y el tratamiento de los pacientes con fibrilación auricular seguidos por cardiólogos y por otros especialistas

To the Editor,

Atrial fibrillation (AF) has a high prevalence, representing 4.4% of the population older than 40 years in Spain.¹ The management of this arrhythmia has undergone significant changes, with the emergence of new direct anticoagulants, the development of AF ablation, and new thromboembolic and bleeding risk scales.² These advances have also made its management more complex. Given its high prevalence, many patients are followed-up in noncardiology settings (internal medicine [IM], primary care [PC]), and there are no data in Spain regarding possible differences in management according to the type of specialist. Over the past year, various registries have been published on nonvalvular AF in Spain, but the majority include patients seen only in cardiology departments³ or PC.⁴ The FANTASIA study (Spanish acronym for Atrial fibrillation: Influence of anticoagulation level and type on stroke and bleeding event incidence),⁵ was designed to include patients attended by both specialties.

The baseline characteristics of the patients monitored by cardiologists and noncardiologists (IM/PC) were analyzed. Between June 2013 and October 2014, 100 investigators (81% cardiologists, 11% PC specialists and 8% IM specialists) enrolled 2178 consecutive patients with nonvalvular AF seen in outpatient consultations throughout Spain. All the investigators worked at centers within the national health care system. The choice of sites and investigators was made in a nonrandomized manner, by invitation of the scientific committee, following the criteria of

territorial distribution by autonomous community and hospital level (one third from each level: primary, secondary, and tertiary).

The mean age was 73.8 ± 9.2 years and women accounted for 42.5% of the sample. There were no differences in these variables between the patients attended by IM and PC or between those attended at hospital appointments and those seen in cardiology outpatient consultations. The mean age of the IM/PC patients was 4 years older than that of patients attended by cardiologists (Table 1). There was a slightly higher rate of hypertension and diabetes mellitus among the IM/PC patients. There was a high prevalence of previous heart disease, approximately 48%, which was similar between the 2 groups. There were no differences in bleeding history or in most types of heart disease (including coronary heart disease) (Table 1), with the exception of heart failure, which was more common (32% vs 27%, $P = .049$) in patients followed-up by IM/PC. AF was more frequently paroxysmal in the patients followed up by cardiology ($P < .001$) (Table 1). A history of electrical cardioversion and AF ablation, while infrequent in both groups, was more common in the group followed up by cardiologists. There was a high thromboembolic risk, which was greater in the IM/PC patients (mean CHA₂DS₂-VASC scores of 4.15, vs 3.60; $P < .001$). Bleeding risk, calculated using the HAS-BLED scale, was moderate and was higher in the IM/PC patients (Table 1).

General cardiovascular drug therapy was similar in both groups, with a slightly higher proportion of diuretics, antiplatelet agents and statins in IM/PC patients (Table 2). Cardiologists used the rhythm control strategy more frequently (43.7% vs 17.3%; $P < .001$), although the rate control strategy prevailed in both groups (Table 2). A higher proportion of patients followed-up by cardiologists received prophylactic antiarrhythmic drugs (26.9% vs 15.3%, $P < .001$). All patients received anticoagulants, in line with the study design. In patients receiving vitamin K antagonists, time in therapeutic range calculated using the Rosendaal method was similar, approximately 61% of days (Table 2). The percentage of patients poorly controlled with vitamin K antagonists (time in

Table 1

Demographic Characteristics, Cardiovascular Risk Factors, Comorbidities, and Bleeding and Cardiological Histories in the Total Series and Comparison Between Patients Attended by Cardiologists and Noncardiologists

	All	Cardiology	IM/PC	P*
Patients, n	2178	1765	413	
Demographic data				
Age, y	73.8 ± 9.2	73.1 ± 9.1	77.1 ± 9.4	< .001
Female	43.85	42.49	49.64	.008
Employment situation: employed	8.72	9.58	5.08	.013
University education	7.85	8.27	6.05	.131
Comorbidity and cardiovascular risk factors				
History of hypertension	80.39	79.66	83.54	.074
History of hyperlipidemia	52.30	51.50	55.69	.125
History of diabetes	29.57	28.50	34.14	.024
History of smoking	37.05	37.34	4.60	.676
Current smoker	5.00	5.10	4.60	.432
COPD/OSAS	17.54	17.39	18.16	.712
Renal insufficiency	18.92	18.30	21.55	.129
Dialysis	0.69	0.68	0.73	.918
History of cancer	8.31	8.33	8.23	.949
Peripheral artery disease	6.24	5.84	7.99	.103
History of stroke/TIA	17.13	16.66	19.13	.230
Hemorrhagic stroke	1.01	0.96	1.21	.346

Table 1 (Continued)

Demographic Characteristics, Cardiovascular Risk Factors, Comorbidities, and Bleeding and Cardiologic Histories in the Total Series and Comparison Between Patients Attended by Cardiologists and Noncardiologists

	All	Cardiology	IM/PC	P
Previous noncerebral embolism	2.07	1.93	2.66	.343
Thyroid dysfunction	11.52	11.84	10.17	.338
Alcohol or drug abuse	3.40	2.95	5.33	.016
Abbreviated Charlson comorbidity index	1.14 ± 0.77	1.11 ± 0.76	1.26 ± 0.78	.031
Bleeding history				
Previous major bleeding	3.90	3.80	4.36	.595
Bleeding requiring transfusion	34.12	29.85	50.00	.109
Bleeding requiring surgery	8.24	7.46	11.11	.617
Previous heart disease				
Previous heart disease	47.15	47.48	45.76	.529
Heart failure	28.51	27.59	32.45	.049
HF with reduced EF (< 40%)	12.26	12.86	9.69	.044
Previous coronary disease	18.14	18.30	17.43	.681
Coronary stents	9.14	9.58	7.26	.142
Dilated cardiomyopathy	11.29	12.29	7.02	.002
Aortic valve disease	3.08	2.83	4.12	.174
LV hypertrophy due to hypertension	15.66	15.41	16.71	.514
Previous tachycardia	6.34	6.57	5.33	.350
Previous bradycardia	5.37	5.21	6.05	.495
Pacemaker	6.34	5.78	8.72	.027
Resynchroniser	3.31	3.74	1.45	.019
ICD	2.16	2.44	0.97	.045
AF-related history				
Type of AF				< .001
Paroxysmal	29.36	30.91	22.76	
Persistent	16.52	16.99	14.53	
Long-term persistent	4.69	4.20	6.78	
Permanent	49.42	47.90	55.93	
Previous electrical cardioversion	17.67	20.06	7.51	< .001
Previous pharmacological cardioversion	22.32	22.95	19.61	.142
Previous AF ablation	4.00	4.60	1.45	.003
Previous atrial closure	0.32	0.34	0.24	.750
CHADS ₂ scale	2.24 ± 1.24	2.15 ± 1.22	2.46 ± 1.31	< .001
CHA ₂ DS ₂ -VASC scale	3.70 ± 1.52	3.60 ± 1.45	4.15 ± 1.63	< .001
HAS-BLED scale	2.01 ± 1.24	1.91 ± 1.12	2.40 ± 1.53	< .001
Sinus rhythm in baseline ECG	33.63	36.79	20.15	< .001
AF in baseline ECG	60.19	57.63	71.12	< .001

AF, atrial fibrillation; COPD, chronic obstructive pulmonary disease; ECG, electrocardiogram; EF, ejection fraction; HF, heart failure; ICD, implantable cardioverter defibrillator; IM, internal medicine; LV, left ventricle; OSAS, obstructive sleep apnea syndrome; PC, primary care; TIA, transient ischemic attack.

Unless otherwise indicated, values are expressed as percentage or mean ± standard deviation.

* Bilateral.

therapeutic range < 65%) was high, > 50%, but was similar between the 2 groups (53.7% and 52.7%).

Our study provides data on the differences in characteristics and treatment of patients with nonvalvular AF followed up by cardiologists and noncardiologists in a wide sample of patients in a “real-world” setting. Its main conclusions are as follows: a) in the sample analyzed, some differences were observed between patients attended by cardiologists and by noncardiologists: those seen by IM/PC were older (mean age 4 years older) and had a higher prevalence of comorbidities (especially diabetes mellitus, preserved heart failure, a higher Charlson comorbidity index, and higher CHA₂DS₂-VASC and HAS-BLED scores); b) there was a high prevalence of structural heart disease (approximately 50%); c) in

general, antiarrhythmic treatment was essentially “conservative”, with a clear predominance of rate control over rhythm control strategies; d) rhythm control strategies and their associated procedures were much more widely used in patients followed up by cardiologists, which may be partly related to the age difference and the type of AF; and e) although all the patients had to receive anticoagulation therapy due to the study design, and consequently it is impossible to draw conclusions on differences in the appropriateness of the indications for anticoagulation, the quality of the anticoagulation in patients receiving vitamin K antagonists was poor and was similar between the 2 groups (more than 50% of the patients had a time in therapeutic range < 65%, with these data being similar to those reported by other recent

Table 2

Pharmacological, Antiarrhythmic and Anticoagulant Treatment in the Total Series and Comparison Between Patients Attended by Cardiologists and Noncardiologists

	All	Cardiology	IM/PC	P*
Patients, n	2178	1765	413	
Control strategy at initial visit				
<i>Rhythm</i>	38.70	43.69	17.43	< .001
<i>Rate</i>	61.30	56.31	82.57	
General cardiovascular drugs				
<i>Diuretics</i>	57.38	56.09	62.86	.012
<i>Aldosterone antagonists</i>	13.88	13.38	16.02	.164
<i>ACE inhibitors</i>	31.18	30.87	32.52	.513
<i>ARBs</i>	40.13	39.64	42.23	.333
<i>Statins</i>	54.57	53.53	58.98	.046
<i>Antiplatelet agents</i>	10.42	9.23	15.53	< .001
<i>BB</i>	60.29	59.91	61.89	.459
<i>Digoxin</i>	18.04	18.05	17.96	.965
<i>Calcium-channel blockers</i>				.051
<i>No</i>	75.92	76.25	74.51	
<i>Dihydropyridines</i>	13.65	12.98	16.50	
<i>Verapamil</i>	2.40	2.73	0.97	
<i>Diltiazem</i>	8.03	8.03	8.01	
Antiarrhythmic drugs	24.82	26.99	15.53	< .001
<i>Type of antiarrhythmic agent</i>				
<i>Flecainide</i>	8.95	9.97	4.61	.124
<i>Propafenone</i>	0.65	0.74	0.24	.324
<i>Amiodarone</i>	12.18	12.70	9.95	.156
<i>Dronedrone</i>	2.58	3.08	0.49	.125
<i>Sotalol</i>	0.46	0.51	0.24	.423
Drug combinations				
<i>Inhibitors</i>	13.73	13.78	13.56	.764
<i>BB+digoxin+calcium antagonist</i>	0.28	0.23	0.48	.369
<i>BB+digoxin</i>	10.33	10.37	10.17	.905
<i>BB+calcium antagonist</i>	0.64	0.57	0.97	.357
<i>Digoxin+calcium antagonist</i>	2.48	2.61	1.94	.431
<i>Antiarrhythmics+inhibitors</i>	14.90	15.87	9.69	< .001
<i>Antiarrhythmic+BB</i>	13.09	14.11	8.72	.003
<i>Antiarrhythmic+digoxin</i>	0.37	0.4	0.24	.64
<i>Antiarrhythmic+calcium antagonist</i>	1.24	1.36	0.73	.295
Anticoagulation therapy				
<i>VKA</i>	75.51	74.77	78.64	.123
<i>DOAC</i>	24.49	25.23	21.36	.168
<i>Rosendaal TTR (% of days in therapeutic range)</i>	61.2 ± 23.2	61.4 ± 23.2	60.5 ± 22.9	.458
<i>TTR < 65%</i>	52.98	52.79	53.77	.753

ACE inhibitors, angiotensin-converting enzyme inhibitors; ARB, angiotensin receptor blockers; BB, beta-blockers; DOAC, direct oral anticoagulants; IM, internal medicine; PC, primary care; TTR, time in therapeutic range; VKA, vitamin K antagonists.

Unless otherwise indicated, values are expressed as percentage or mean ± standard deviation.

* Bilateral.

studies in Spain).^{3,4} This situation must be improved, regardless of which setting provides treatment and follow-up.

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