

Polish and European management strategies in patients with atrial fibrillation

Data from the EURObservational Research Programme-Atrial Fibrillation General Registry Pilot Phase (EORP-AF Pilot)

Radosław Lenarczyk¹, Katarzyna Mitreǵa¹, Michał Mazurek¹, Marianna Janion², Grzegorz Opolski³, Jarosław Drożdż⁴, Witold Streb¹, Artur Fuglewicz⁵, Adam Sokal¹, Cécile Laroche⁶, Gregory Y.H. Lip⁷, Zbigniew Kalarus¹

1 Department of Cardiology, Congenital Heart Disease and Electrotherapy, Medical University of Silesia, Silesian Center for Heart Diseases, Zabrze, Poland

2 2nd Department of Cardiology, Faculty of Medicine and Health Sciences, Jan Kochanowski University, Kielce, Poland

3 1st Department of Cardiology, Medical University of Warsaw, Warsaw, Poland

4 Cardiology Unit, Department of Cardiology and Cardiac Surgery, Medical University of Lodz, Łódź, Poland

5 Department of Heart Diseases, Wrocław Medical University, Military Hospital, Wrocław, Poland

6 EURObservational Research Programme Department, European Society of Cardiology, Sophia Antipolis, France

7 University of Birmingham Centre for Cardiovascular Sciences, City Hospital, Birmingham, United Kingdom

KEY WORDS

anticoagulation, atrial fibrillation, guidelines, stroke, regional differences

ABSTRACT

INTRODUCTION Despite continued efforts of the European Society of Cardiology (ESC) to unify management of patients with atrial fibrillation (AF) across Europe, interregional differences in guideline adherence are likely.

OBJECTIVES The aim of the study was to compare treatment strategies depending on baseline characteristics of AF patients between Poland and other members of the European Union (EU).

PATIENTS AND METHODS We analyzed the baseline data and treatment strategies in participants of the ESC registry: the EURObservational Research Programme-Atrial Fibrillation General Registry Pilot Phase. A total of 3119 consecutive patients with AF diagnosed within the last year were included in 67 centers from 9 countries, including 419 patients enrolled in 15 Polish centers.

RESULTS A rhythm control strategy was more frequent in Poland than in other EU countries (20.8% vs 11.9%; $P < 0.0001$). Catheter ablation for AF was also used more frequently in Polish cardiology wards (13.9% vs 8.3%; $P = 0.0017$), while amiodarone at discharge was used less frequently (12.0% vs 22.7%; $P < 0.0001$). In-hospital use of vitamin K antagonists (VKAs) and non-VKA anticoagulants was less frequent in Polish patients with a CHA₂DS₂-VASc score of 2 or higher than in patients from other EU countries (61.1% vs 79.0%; $P < 0.0001$), but overall anticoagulation rates at discharge were similar to those in other countries (83.3% vs 82.6%).

CONCLUSIONS A rhythm control-oriented strategy in patients with AF with the use of ablation in cardiology wards is more frequent in Poland than in other EU countries. Similar to other EU countries, compliance with the ESC guidelines regarding anticoagulation in AF patients is suboptimal in Poland. Undertreatment was observed in a significant proportion of patients at high risk of stroke, while a large group of low-risk patients are overtreated. Differences between the types of recruiting centers in Poland and other EU countries might have influenced the results.

INTRODUCTION Atrial fibrillation (AF) is the most common arrhythmia worldwide, affecting 1% to 2% of the general population. The estimated prevalence of AF in Poland is close to 600 000,

and this number is expected to at least double within the next 20 years.¹ AF is associated with significant morbidity and a doubling of mortality rates, particularly from thromboembolism.

Correspondence to:

Radosław Lenarczyk, MD, PhD,

Kliniczny Oddział Kardiologii,

Wrocławskich Wad Serca

i Elektroterapii, Śląski Uniwersytet

Medyczny, Śląskie Centrum Chorób

Serca, ul. Curie-Skłodowskiej 9,

41-800 Zabrze, Poland,

phone: +48 32 37 33 682,

e-mail: radle@poczta.onet.pl

Received: November 29, 2015.

Revision accepted: February 12, 2016.

Published online: March 22, 2016.

Conflict of interests: see p. 146.

Pol Arch Med Wewn. 2016;

126 (3): 138-148

doi: 10.20452/pamw.3322

Copyright by Medycyna Praktyczna,

Kraków 2016

TABLE 1 Demographic characteristics, comorbidities, and risk factors at enrollment (continued on the next page)

Variable	All patients (n = 3119)	Polish patients (n = 419)	Other EU countries (n = 2700)	P value
demographic data				
age, y, median (IQR)	69 (62–77)	67 (60–74)	70 (62–77)	<0.0001
age ≥75 years, %	33.7	24.8	35.1	<0.0001
age >65 years, %	63.9	53.9	65.5	<0.0001
age ≤50 years, %	6.5	6.2	6.6	0.7868
female sex, %	40.4	44.6	39.7	0.0577
concomitant diseases, %				
lone AF	3.9	1.9	4.2	0.0231
coronary artery disease	36.3	46.7	34.6	<0.0001
myocardial infarction	44.9	42.4	45.5	0.4492
PCI/CABG	47.0	44.1	47.6	0.3909
stable angina	37.4	72.3	29.6	<0.0001
chronic heart failure	47.5	44.6	47.9	0.2087
CHF of whom NYHA class III/IV	41.5	39.2	41.9	0.5004
valvular heart disease	63.4	67.3	62.8	0.0807
dilated cardiomyopathy	11.5	9.9	11.8	0.2609
hypertrophic cardiomyopathy	3.9	1.7	4.2	0.0152
restrictive cardiomyopathy	0.5	0.2	0.5	0.7090 ^a
hypertensive cardiomyopathy	19.5	7.1	21.5	<0.0001
other cardiac disease	8.3	13.5	7.4	<0.0001
chronic obstructive pulmonary disease	11.0	6.8	11.6	0.0033
hyperthyroidism	3.0	4.1	2.8	0.1397
hypothyroidism	7.2	10.9	6.7	0.0020
chronic kidney disease	13.1	12.5	13.2	0.6673
peripheral vascular disease	11.0	7.7	11.6	0.0219
cardiovascular risk factors, %				
diabetes	20.6	26.2	19.7	0.0023
hypertension	70.7	77.9	69.6	0.0005
current smokers	11.1	10.8	11.2	0.8355
hypercholesterolemia	48.4	47.0	48.6	0.5565
alcohol use ≥2–3/day	7.8	2.0	8.7	<0.0001
physical activity, %				
none	39.2	44.7	38.4	0.0559
occasional	34.9	32.3	35.2	
regular	21.3	17.5	21.9	
intense	4.6	5.4	4.5	
comorbidities, %				
ischemic thromboembolic complications	13.1	12.9	13.1	0.8973
previous stroke	6.3	8.1	6.0	0.1007
previous TIA	4.1	2.4	4.4	0.0598
hemorrhagic events	5.8	6.9	5.7	0.3141
hemorrhagic stroke	5.0	6.9	4.6	0.6380 ^a
major bleeding	27.6	17.2	29.6	0.1724
malignancy, %	5.4	4.9	5.4	0.6373

In addition, AF is responsible for 15% to 36% of all strokes, and AF-related strokes are associated with worse prognosis when compared to nonarrhythmic ones.^{2–4} Even very short (of 5- to 6-minute duration), asymptomatic episodes of AF may significantly increase the probability of stroke and death. For these reasons, an appropriately assessed risk of stroke and preventive measures against thromboembolic complications are of paramount importance in AF patients.^{5,6}

To the best of our knowledge, there are limited data thus far comparing stroke prevention strategies in AF patients in Poland and other European countries. Little is also known on the treatment strategies in high- and low-risk AF patients in Poland and how these strategies comply with the current guidelines of the European Society of Cardiology (ESC).^{7,8} The lack of knowledge on this topic may result in inappropriate stroke prevention or nonadequate treatment in Poland and, consequently, higher ischemic or bleeding risks among AF patients. Recently published data suggest that the proportion of patients with CHA₂DS₂-VASc scores of 2 to 8 treated with oral anticoagulants (OACs) may be as low as 78%. Paradoxically, as many as half of the AF population with a CHA₂DS₂-VASc score of 0 are treated with OACs.⁹

The aim of this analysis was to assess treatment strategies and their association with baseline AF patients' characteristics in Poland compared with other members of the European Union (EU), based on data derived from a large, contemporary European registry. Specifically, we aimed to investigate the adherence to current ESC recommendations regarding treatment of both high- and low-risk AF groups among Polish physicians involved in AF management.

PATIENTS AND METHODS The EURObservational Research Programme is a system of registries that was initiated by the ESC in 2009 to better understand medical practice among physicians involved in cardiovascular care, based on a broad scope of observational data collected throughout European countries. The methodology of the EURObservational Research Programme-Atrial Fibrillation General Registry Pilot Phase (EORP-AF Pilot registry) has been published elsewhere.^{9,10} In brief, the aim of the registry was to assess complications related to AF across Europe in order to confirm whether diagnostic and treatment methods remain concordant with the current ESC recommendations, and to verify whether they affect outcomes in AF patients.

The registry population consisted of consecutive inpatients and outpatients presenting to cardiologists with AF as the main diagnosis or as a comorbid condition. To be included in the registry, patients had to have AF within the last year recorded on an electrocardiogram, but they did not need to be in arrhythmia at the time of enrollment. The presentation of a patient or a planned approach (initiation of pharmacotherapy,

TABLE 1 Demographic characteristics, comorbidities, and risk factors at enrollment (continued from the previous page)

Variable	All patients (n = 3119)	Polish patients (n = 419)	Other EU countries (n = 2700)	P value
CHADS₂ score				
mean score ± SD	1.92 ± 1.27	1.93 ± 1.24	1.92 ± 1.28	0.8732
0, %	12.6	9.1	13.1	
1, %	27.1	33.7	26.1	
≥2, %	60.3	57.3	60.8	
CHA₂DS₂-VASc score				
mean score ± SD	3.24 ± 1.79	3.21 ± 1.78	3.25 ± 1.80	0.5416
0, %	5.7	4.1	6.0	
1, %	12.6	14.3	12.3	
≥2, %	81.7	81.6	81.7	
HAS-BLED score				
mean ± SD	1.37 ± 1.06	1.22 ± 1.03	1.39 ± 1.06	0.0025
0, %	21.7	27.4	20.8	
1, %	37.7	36.3	37.9	
≥2, %	40.7	36.3	41.3	

The Kruskal–Wallis test was used for quantitative data. The χ^2 or Fisher exact test (a) was used for binary variables.

For qualitative variables with more than 2 possibilities, the Monte Carlo estimates of the exact P values were used.

Abbreviations: CABG, coronary artery bypass grafting; CHF, congestive heart failure; IQR, interquartile range; NYHA, New York Heart Association; PCI, percutaneous coronary intervention; SD, standard deviation; TIA, transient ischemic attack

intended cardioversion or ablation) did not influence the inclusion. All patients provided written informed consent to participate in the registry. Twelve countries were initially invited to take part in the pilot phase, and finally 9 countries formally participated in the project. A minimum of 20 patients per center were to be enrolled, with the aim to enroll 3000 subjects. Finally, 3119 consecutive patients were included in 67 centers from 9 countries. Participating investigator sites presented a mixture of tertiary, secondary, and general hospitals but also included outpatient clinics with a broad range of diagnostic and therapeutic capabilities (with and without interventional cardiology units, electrophysiology, or on-site cardiac surgery). The registry schedule assumed 1 baseline visit and 1 visit per year over a 3-year period, but only data collected at baseline, during hospitalization (or outpatient visit), and at discharge were taken into account in this analysis.

Statistical analysis A univariate analysis was applied both to continuous and categorical variables. Continuous variables were reported as mean ± standard deviation or as median and interquartile range. Categorical variables were reported as percentages. Between-group comparisons were made using the Kruskal–Wallis test for continuous variables and the χ^2 test or Fisher exact test for categorical variables, if any expected cell count was less than 5. A 2-sided P

value of less than 0.05 was considered statistically significant.

All analyses were performed using the SAS statistical software version 9.4 (SAS Institute, Inc., Cary, North Carolina, United States).

RESULTS From among 3119 patients enrolled in 67 European investigator sites, 419 patients (13.4%) were included in 15 Polish centers. The reference profile of the enrolling sites was distributed differently in Poland compared with other participating countries. A greater proportion of Polish patients was enrolled in specialized centers than in other EU countries (75.5% vs 63.3% of patients; $P < 0.0001$). More patients in Poland than in other EU countries were included in cardiology wards (75.9% vs 60.6%), whereas fewer patients were enrolled in outpatient clinics (22.2% vs 25.2%) and in private cardiology practices (0.2% vs 5.8%; $P < 0.0001$).

Baseline characteristics and arrhythmia type Patients enrolled in Poland differed with respect to several baseline characteristics compared with AF patients included in other participating countries (TABLES 1 and 2). Polish patients were younger, with borderline larger proportion of women, had greater prevalence of coronary artery disease (mainly in a form of stable angina), more often had a history of diabetes and arterial hypertension, as well as previous catheter ablation and pacemaker implantation. They were less prone to have chronic obstructive pulmonary disease or peripheral vascular disease and less often presented with hypertensive or hypertrophic cardiomyopathy. Patients enrolled in Poland had higher body mass index and lower systolic blood pressure. The mean CHADS₂ and CHA₂DS₂-VASc scores were distributed similarly between Polish patients and those from other countries (1.93 ± 1.24 vs 1.92 ± 1.28 and 3.21 ± 1.78 vs 3.25 ± 1.80, respectively), whereas HAS-BLED scores were lower in Polish patients than in those enrolled in other countries (1.22 ± 1.03 vs 1.39 ± 1.06; $P = 0.003$). Polish participants had lower left ventricular ejection fraction (LVEF), but less often had left ventricular hypertrophy detected on echocardiography. They had similar heart rates during sinus rhythm, but slower ventricular rates during AF than patients enrolled in other European countries (median heart rate of 90 and 92 bpm, respectively). Compared with patients from other EU countries, Polish patients presented less often with first-detected AF, but more often with paroxysmal AF (TABLE 3).

Management strategy and interventions performed Patients enrolled in Poland were more often subjected to rhythm control only (20.8% vs 11.9%), whereas less often observation was the only intervention (1.0% vs 4.6%), compared with patients in other participating countries (TABLE 3). Among Polish inpatients (n = 323), pharmacological cardioversion was performed less often than in subjects from other EU countries (21.2%

TABLE 2 Patients' history and results of clinical evaluation at enrollment

Variable	All (n = 3119)	Polish (n = 419)	Other EU countries (n = 2700)	P value
previous interventions				
pharmacological cardioversion	36.3	35.8	36.4	0.8411
electrical cardioversion	28.7	31.9	28.2	0.1313
catheter ablation	7.7	10.4	7.3	0.0273
pacemaker implantation	6.9	13.4	5.9	<0.0001
ICD implantation	1.5	2.4	1.3	0.0961
AF surgery	0.9	1.4	0.8	0.257 ^a
physical examination				
BMI, kg/m ²	27 (25–31)	28 (25–32)	27 (25–30)	0.0002
systolic blood pressure, mmHg	130 (120–142)	130 (120–140)	130 (120–145)	0.0004
diastolic blood pressure, mmHg	80 (70–87)	80 (70–80)	80 (70–88)	0.1372
electrocardiogram				
QRS duration, ms	98 (82–110)	98 (80–110)	98 (82–110)	0.3407
left BBB	53.8	55.0	53.7	0.8745
right BBB	46.2	45.0	46.3	
heart rate, bpm				
during AF	92 (76–119)	90 (76–106)	92 (76–120)	0.0219
in sinus rhythm	67 (58–77)	67 (60–75)	67 (58–78)	0.6150
echocardiogram				
LA size, mm	44 (40–50)	45 (40–50)	44 (40–50)	0.5079
LVEF, %	55 (45–60)	55 (42–60)	55 (45–60)	0.0045
LVH	31.3	23.2	32.6	0.0002

Data are presented as percentage of patients or median (interquartile range).

The Kruskal–Wallis test was used for quantitative data. The χ^2 or Fisher exact test (a) was used for binary variables. For qualitative variables with more than 2 possibilities, the Monte Carlo estimates of the exact P values were used.

Abbreviations: AF, atrial fibrillation; BBB, bundle branch block; BMI, body mass index; ICD, implantable cardioverter-defibrillator; LA, left atrial; LVEF, left ventricular ejection fraction; LVH, left ventricular hypertrophy

vs 31.6%; $P = 0.0002$), whereas similar proportions of patients underwent electrical cardioversion (24.6% and 22.5%, respectively; $P = 0.3518$). Lower rates of pharmacological cardioversion were noted in Polish patients irrespective of age and sex, but only in those with New York Heart Association (NYHA) class 2 or higher, and not in subjects in NYHA class 1. The proportion of patients undergoing rhythm control was higher in Poland if analyses were limited exclusively to cardiology wards, but also if sites other than cardiology wards were considered (Supplementary material online, *Tables S1* and *S2*). However, while pharmacological cardioversion was performed less often in Polish cardiology wards (20.3% vs 31.9%; $P < 0.0001$), it was more common in Poland than in other countries if only centers other than cardiology wards were considered (80.0% and 20.6%, respectively; $P = 0.0160$) (Supplementary material online, *Tables S3* and *S4*). Catheter

ablation for AF therapy was more commonly performed in Polish patients during index hospitalization than in subjects from other EU countries (*TABLE 4*). This procedure was a more frequent approach in Polish patients younger than 69 years (21.2% vs 13.7%; $P = 0.0112$), in women (14.4% vs 7.1%; $P = 0.0047$), in those in NYHA class 2 or higher (8.8% vs 1.3%; $P < 0.0001$), and in those with a CHA₂DS₂-VASc score of 3 or higher (6.9% vs 3.3%; $P = 0.0154$), but not in older patients, in men, and in those in NYHA class 1 (all $P =$ non-significant vs other EU countries). Catheter ablation for AF was used more commonly in Polish patients than in patients from other EU countries in cardiology wards (13.9% vs 8.3%; $P = 0.0017$), but not in non-cardiology sites (Supplementary material online, *Tables S3* and *S4*).

Drugs for inpatient rate and rhythm control Therapy with amiodarone for rhythm control was used less frequently among inpatients enrolled in Poland than among participants from other EU countries (16.2% vs 31.4%; $P < 0.0001$). Considering rate control, non-dihydropyridine (non-DHP) calcium channel blockers, as well as *Digitalis* were also used less commonly in Poland than in other European countries (2.8% vs 7.0%; $P = 0.0046$; and 16.8% vs 26.6%; $P = 0.0002$; respectively). Proportions of patients treated with β -blockers were distributed similarly (*TABLE 4*). Differences between Poland and other EU countries with respect to the use of amiodarone (16.5% vs 31.8%; $P < 0.0001$), non-DHP calcium channel blockers (2.8% vs 6.9%; $P = 0.0069$), and *Digitalis* (17.1% vs 26.6%; $P = 0.0003$) still remained significant when the analysis was limited to cardiology wards. Considering centers other than cardiology wards, no significant differences were seen between Poland and other EU countries (Supplementary material online, *Tables S3* and *S4*).

Other drugs during index hospitalization Angiotensin-converting enzyme inhibitors were instituted to a greater proportion of Polish inpatients, compared with participants from other EU countries (59.0% vs 40.8%; $P < 0.0001$). In-hospital use of angiotensin receptor blockers (18.7% vs 22.2%), diuretics (46.2% vs 51.3%), or aldosterone antagonists (26.6% vs 24.2%, all $P =$ nonsignificant) was distributed similarly in Polish patients and participants from other countries.

Drug therapy at discharge Proportions of patients discharged on β -blockers and DHP calcium channel blockers were significantly larger among Polish participants than in AF patients discharged from hospitals in other EU countries (79.1% vs 68.0%; $P < 0.0001$ and 17.7% vs 12.7%, respectively; $P = 0.0052$). On the other hand, amiodarone was prescribed at discharge less often in Polish patients (12.0% vs 22.7%; $P < 0.0001$) (*TABLE 5*). No differences were noted for digoxin and non-DHP calcium channel blockers at discharge. More frequent posthospital use of β -blockers in Poland

TABLE 3 Type of atrial fibrillation and management strategy at enrollment

Variable	All patients (n = 3119)	Polish patients (n = 419)	Other EU countries (n = 2700)	<i>P</i> value
AF type				
first detected	30.3	21.3	31.7	<0.0001
paroxysmal	26.5	32.8	25.5	
persistent	26.0	25.4	26.1	
permanent	17.3	20.5	16.7	
management strategy				
rate control	39.0	37.9	39.1	<0.0001
rate and rhythm control	43.9	40.3	44.4	
rhythm control only	13.0	20.8	11.9	
observation	4.1	1.0	4.6	

Data are presented as percentage of patients.

The Kruskal–Wallis test was used for quantitative data. The χ^2 test was used for binary variables. For qualitative variables with more than 2 possibilities, the Monte Carlo estimates of the exact *P* values were used.

Abbreviations: see [TABLE 2](#)

TABLE 4 Interventions and drug therapy during hospitalization visit

Variable	All patients (n = 3119)	Polish patients (n = 419)	Other EU countries (n = 2700)	P value
No. of patients (inpatients only)	1994	323	1671	–
antiarrhythmic drugs				
at least 1	38.7	40.3	38.4	0.5133
amiodarone	28.9	16.2	31.4	<0.0001
β -blockers	72.1	76.5	71.3	0.0586
DHP calcium channel blockers	12.8	16.2	12.2	0.0480
non-DHP calcium channel blockers	6.3	2.8	7.0	0.0046
digoxin	25.0	16.8	26.6	0.0002
antithrombotic treatments				
at least 1 ^a	96.3	96.6	96.3	0.7940
vitamin K antagonist	72.0	62.5	73.8	<0.0001
NOAC	6.1	3.5	6.6	0.0391
acetylsalicylic acid	37.8	38.3	37.7	0.8599
intervention				
electrical cardioversion	22.9	24.9	22.5	0.3518
pharmacological cardioversion	30.0	21.2	31.6	0.0002
catheter ablation	9.1	13.7	8.2	0.0018

Data are presented as percentage of patients.

The Kruskal–Wallis test was used for quantitative data. The χ^2 test was used for binary variables. For qualitative variables with more than 2 possibilities, the Monte Carlo estimates of the exact *P* values were used.

a at least 1 antithrombotic drug from the following list: vitamin K antagonists, acetylsalicylic acid, indobufen, clopidogrel, prasugrel, ticagrelor, ticlopidine, dabigatran, rivaroxaban, apixaban, unfractionated heparin, low-molecular-weight heparin, fondaparinux

Abbreviations: DHP, dihydropyridine; NOAC, novel oral anticoagulant

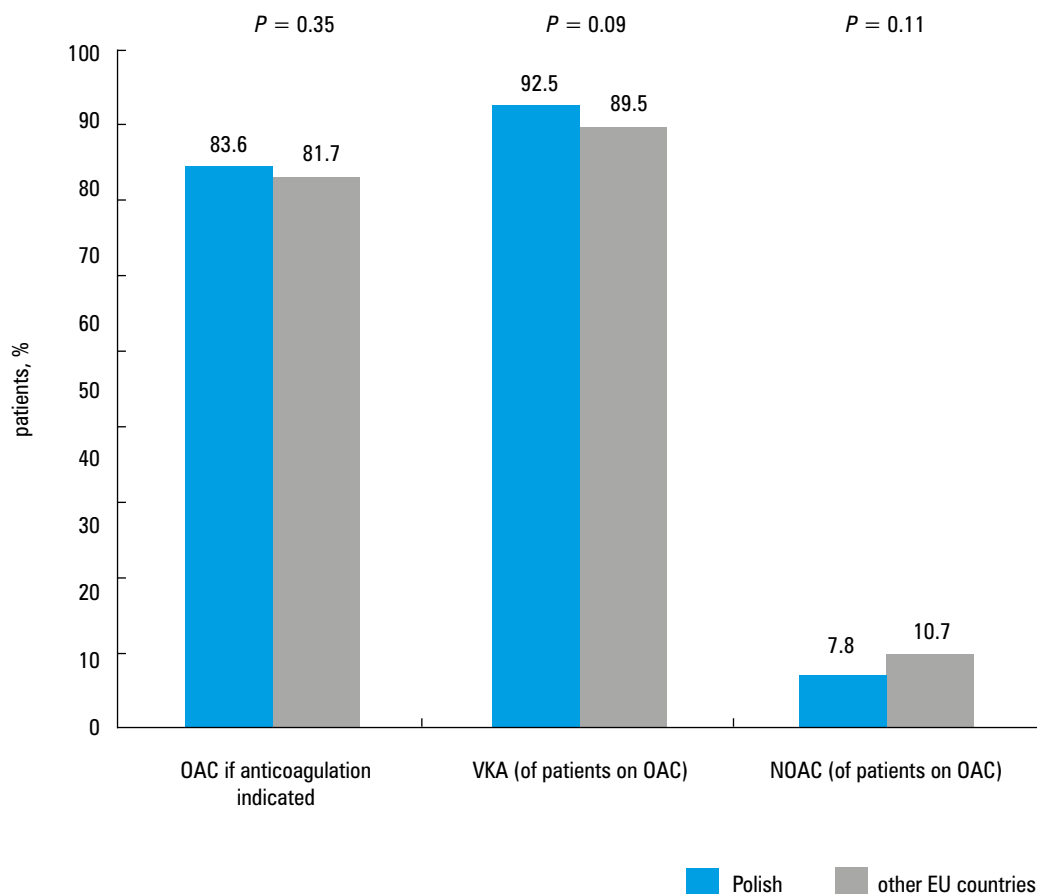
was seen across a wide range of subgroups: in patients younger than 69 years (83.8% vs 68.5%; $P < 0.0001$), but not in older ones ($P = 0.1299$), in women (75.7% vs 68%; $P = 0.0378$) and men (81.8% vs 67.9%; $P < 0.0001$), in patients in NYHA class 2 or higher (85.5% vs 75.6%; $P = 0.0044$), in those with LVEF $< 55\%$ (83.8% vs 76.8%; $P = 0.0399$), but also in those with LVEF of 55% or less (76.9% vs 63.0%; $P = 0.0002$). The same holds true for long-term use of amiodarone, which was prescribed at discharge less frequently in Poland than in other EU countries in patients aged less than 69 years (14.5% vs 23.7%; $P = 0.0019$), but especially seldom in older subjects (8.8% vs 22.0%; $P < 0.0001$), both in women (9.7% vs 24.0%; $P < 0.0001$) and men (13.9% vs 21.9%; $P = 0.0049$), in those in NYHA class 2 or higher (13.4% vs 30.0%; $P < 0.0001$), with LVEF of less than 55% (14.0% vs 23.7%; $P = 0.004$), but not in patients with better left ventricular function ($P = 0.0507$ vs other EU countries). Less frequent use of amiodarone at discharge in Poland than in the remaining EU registry participants was seen both in cardiology wards (14.2% vs 28.5% respectively; $P < 0.0001$) and in other types of medical centers (5.0% vs 13.9%; $P = 0.0107$). The difference in the use of β -blockers between Poland and other countries was even more significant for non-cardiology wards (81.2% vs 64.7%; $P = 0.0008$) than for cardiology ones (78.4% vs 70.1%; $P = 0.0027$). Digoxin was prescribed less frequently in Polish cardiology wards (15.2% vs 23.4%; $P = 0.0012$) but non-cardiology centers discharged patients more frequently on *digoxin* in Poland than in other countries (22.8% vs 15.0%; $P = 0.04$) (Supplementary material online, *Tables S5 and S6*).

Polish women (18.8% vs 13%; $P = 0.0342$), patients aged 69 years or older (22.0% vs 13.2%; $P = 0.0013$) and those with LVEF of less than 55% (17.3% vs 9.2%; $P = 0.0013$) were discharged on DHP calcium channel blockers more often than patients in other participating countries. Non-DHP calcium channel blockers were used less frequently in Polish patients with LVEF of 55% or higher (3.2% vs 8.4%; $P = 0.0127$).

Stroke, bleeding risk, and antithrombotic therapy

Any anticoagulation therapy (including antiplatelet agents and nonsteroidal anti-inflammatory drugs [NSAIDs]) was administered during hospital visit to 96.6% of Polish patients, similarly to other EU countries ($P = 0.7940$) ([TABLE 4](#)). OACs, including vitamin K antagonists (VKAs), which is the most commonly prescribed OAC, were used in a smaller proportion of Polish inpatients than in other European countries (62.5% vs 73.8%; $P < 0.0001$). Non-VKA OACs (NOACs), administered only to a small fraction of Polish patients, were also less frequently used in Poland than in other EU countries (3.5% vs 6.6%; $P = 0.0391$). On the other hand, the number of patients discharged from hospital on any antithrombotic treatment (including VKA, NOACs, antiplatelet drugs, and NSAIDs) reached 96.9%

FIGURE 1 Antithrombotic treatment in patients with indications for anticoagulation; if indicated: CHA₂DS₂-VASc ≥2 or pharmacological cardioversion planned
Abbreviations: OAC, oral anticoagulant; VKA, vitamin K antagonist; others, see TABLE 4



in Poland, and this proportion was similar to that in other European participating countries (TABLE 5). This was also true for cardiology wards only (97.2% discharged on any OAC in Poland vs 96.0% in the remaining countries; $P = 0.3305$), and only non-cardiology centers (96.0% vs 93.3%; $P = 0.2867$) (Supplementary material online, Tables S5 and S6).

Proportions of patients with indications for anticoagulation (CHA₂DS₂-VASc ≥2 or planned cardioversion) receiving any OAC at discharge or after consultation were similar in Poland and in other EU countries (FIGURE 1). Approximately one-third of patients were treated with antiplatelet agents during index hospitalization ($P = 0.8599$ vs other EU countries), and in 31.0% of patients these drugs were prescribed at discharge ($P = 0.6559$ vs other countries).

The use of OACs by CHA₂DS₂-VASc scores is shown in TABLE 6. As many as 58.3% of Polish patients were still treated with VKAs and another 8.3% were treated with NOACs during hospitalization although their CHA₂DS₂-VASc score was 0; these proportions were similar in other European countries (59.1% and 9.7%, respectively; both $P > 0.9999$). Polish inpatients with a CHA₂DS₂-VASc score of 2 or higher were receiving any anticoagulants (including VKAs, NOACs, antiplatelet agents, and NSAIDs) less frequently compared with the remaining EU countries. Subjects with higher stroke risk (CHA₂DS₂-VASc ≥3) were also anticoagulated less often in Poland (including

VKA use) than in the other countries (65.2% vs 78.8%; $P < 0.0001$).

However, on discharge, the rates of antithrombotic therapy were comparable in Poland and the other countries participating in the EORP-AF registry, irrespective of the CHA₂DS₂-VASc score (TABLE 6).

Considering bleeding risk, anticoagulants were given only to 53.7% of Polish inpatients who had a HAS-BLED score of 3 or higher, which was significantly less frequently than in other EU countries (70.4%; $P = 0.0313$). Among subjects with a lower risk of bleeding (HAS-BLED <3), in-hospital use of any anticoagulant was less frequent in Poland (TABLE 6). Conversely, proportions of patients discharged on anticoagulants were similar in Poland and subjects in other EU countries, irrespective of bleeding risk.

One-year outcomes During 1-year follow-up, the all-cause mortality rate was 4.2% in Polish patients and 6.6% in participants from other EU countries; cardiovascular mortality was 2.0% and 2.9%, respectively. Thrombotic events occurred in 6.0% of Polish patients and in 3.5% of patients enrolled in the remaining EU countries. These included stroke/transient ischemic attack (0.9% in Poland and 1.0% in other EU participants), acute coronary syndrome (1.2% and 0.8%), coronary intervention (4.8% and 2.0%), cardiac arrest (0.3% and 0.2%), peripheral embolism (0.0% and 0.2%), and pulmonary embolism (0.0% in Poland and other EU countries).

TABLE 5 Treatment strategies at discharge

Variable	All patients (n = 3119)	Polish patients (n = 419)	Other EU countries (n = 2700)	P value
antiarrhythmic drugs				
at least 1	35.7	36.2	35.6	0.8151
amiodarone	21.3	12.0	22.7	<0.0001
β -blockers	69.4	79.1	68.0	<0.0001
DHP calcium-channel blockers	13.4	17.7	12.7	0.0052
non-DHP calcium-channel blockers	6.1	4.3	6.4	0.1008
digoxin	19.7	17.0	20.1	0.1405
antithrombotic treatments				
at least 1 ^a	95.2	96.9	95.0	0.0844
vitamin K antagonist	75.3	77.8	74.9	0.2081
NOAC	8.9	6.9	9.2	0.1350
acetylsalicylic acid	32.3	31.4	32.5	0.6559

Data are presented as percentage of patients.

The Kruskal–Wallis test was used for quantitative data. The χ^2 test was used for binary variables. For qualitative variables with more than 2 possibilities, the Monte Carlo estimates of the exact *P* values were used.

a at least 1 antithrombotic drug from the following list: vitamin K antagonists, acetylsalicylic acid, indobufen, clopidogrel, prasugrel, ticagrelor, ticlopidine, dabigatran, rivaroxaban, apixaban, unfractionated heparin, low-molecular-weight heparin, fondaparinux

Abbreviations: see [TABLE 4](#)

DISCUSSION The EORP-AF Pilot Registry provides an important and up-to-date view on during-visit and at-discharge treatment strategies of Polish patients with AF against the background of such strategies in other EU countries. Our country-specific registry data suggest that AF management strategies in Poland may differ from those applied in other EU countries.

First, compared with other EU countries, rhythm control strategy was more often adopted in Polish centers, whereas rate control was used less frequently. The least aggressive approach, namely, observation, was used in a significantly lower proportion of Polish patients, compared with other EU participating centers. Rhythm control strategy in Poland involved a more frequent use of AF ablation techniques in cardiology wards (especially in younger patients, in women, and in patients with NYHA class 2 or higher and with a CHA₂DS₂-VASc score of 3 or higher), and more often pharmacologic cardioversion in non-cardiology wards. Amiodarone was rarely prescribed at discharge in Poland, irrespectively of the type of center. On the contrary, β -blockers were prescribed significantly more often to Polish patients at discharge than to subjects discharged from hospitals in other EU countries. These data have to be interpreted with caution. Baseline characteristics of Polish patients were different from those enrolled in other EU countries (eg, higher prevalence of coronary artery disease may explain more common use of β -blockers).¹¹ The more widespread

use of ablation for AF in Poland than in other EU countries noted in this registry is in contrast with data published recently in the White Book of the European Heart Rhythm Association.¹² The rate of AF ablations per million inhabitants in Poland in 2012 reported by this document (44.3) is lower than the mean rate for Europe (59). There are several possible explanations for these discrepancies, such as inclusion of different countries in both registries, different periods of data collection (2009–2012 in the European Heart Rhythm Association [EHRA] document, 2012–2013 in the EORP registry for baseline data), possible selection bias (patients undergoing invasive procedures reported more likely), and others. Further large-scale international registries are needed to elucidate this issue.

Second, in the context of the profile of Polish enrolling centers, it is somewhat surprising that in-hospital use of OACs (both VKAs and NOACs) was less widespread in Poland compared with other EU countries. Polish participants had similar CHA₂DS₂-VASc scores and even lower HAS-BLED scores than participants from other countries. Although undertreatment with OACs can be partly explained by a greater proportion of Polish inpatients admitted for catheter ablation of AF, in a significant number of these patients, OACs were switched to another treatment, or even withdrawn completely before the procedure. The 2012 Heart Rhythm Society / EHRA / European Cardiac Arrhythmia Society Expert Consensus Statement on Ablation of Atrial Fibrillation suggested that catheter ablation of AF should be considered in patients who are therapeutically anticoagulated with warfarin.¹³ Such an approach was also recommended by the 2012 focused update of the ESC guidelines for the management of AF.⁸ Moreover, more data argue against “bridging” of antithrombotic drugs in patients undergoing catheter ablation. Indeed, data from a recent randomized trial comparing uninterrupted warfarin with low-molecular-weight heparin bridging in patients undergoing catheter ablation for AF showed that continuing warfarin during the periprocedural period reduced the occurrence of stroke and minor bleeding compared with bridging. Of note, VKA discontinuation was shown to be a strong predictor of periprocedural thromboembolism in this study.¹⁴

Third, although the proportion of Polish patients discharged on OACs was high and similar to that in other EU countries, only 83% of patients with a CHA₂DS₂-VASc score of 2 or higher and even 76% of those with a CHA₂DS₂-VASc of 3 or higher were discharged from hospital on any anticoagulant. Although these numbers were not dissimilar from those in other EU countries, they indicate that as many as 1 in 5 to 1 in 4 patients leave the hospital without appropriate antithrombotic therapy. These data imply that adherence to the ESC guidelines still remains suboptimal and, paradoxically, becomes increasingly poor along with a progressively higher risk of

TABLE 6 Antithrombotic therapy according to CHA₂DS₂-VASc and HAS-BLED scores (continued on the next page)

Variable	All patients (n = 3119)	Polish patients (n = 419)	Other EU countries (n = 2700)	P value
treatment strategies during hospitalization				
CHA ₂ DS ₂ -VASc = 0				
No. of patients (inpatients only)	105	12	93	–
at least 1 ^a	68.6	66.7	68.8	>0.999 ^a
vitamin K antagonist, %	59.0	58.3	59.1	>0.999 ^a
NOAC, %	9.5	8.3	9.7	>0.999 ^a
CHA ₂ DS ₂ -VASc = 1				
No. of patients (inpatients only)	237	44	193	–
at least 1 ^a	72.0	79.1	70.5	0.2557
vitamin K antagonist, %	62.7	72.1	60.6	0.1595
NOAC, %	9.3	6.8	9.8	0.7739 ^a
CHA ₂ DS ₂ -VASc ≥2				
No. of patients (inpatients only)	1652	267	1385	–
at least 1 ^a	76.1	61.1	79.0	<0.0001
vitamin K antagonist, %	71.0	58.5	73.4	<0.0001
NOAC, %	5.2	2.6	5.6	0.0419
CHA ₂ DS ₂ -VASc ≥3				
No. of patients (inpatients only)	1328	206	1122	–
at least 1 ^a	76.6	65.2	78.8	<0.0001
vitamin K antagonist, %	73.1	57.7	75.8	<0.0001
NOAC, %	4.7	2.5	5.1	0.1155
HAS-BLED <3				
No. of patients (inpatients only)	1679	282	1397	–
at least 1 ^a	76.6	65.2	78.8	<0.0001
vitamin K antagonist, %	70.3	61.6	72.0	0.0005
NOAC, %	6.3	3.6	6.8	0.0399
HAS-BLED ≥3				
No. of patients (inpatients only)	315	41	274	–
at least 1 ^a	68.3	53.7	70.4	0.0313
vitamin K antagonist, %	64.4	51.2	66.4	0.0579
NOAC, %	3.8	2.4	4.0	>0.999 ^a
treatment strategies at discharge				
CHA ₂ DS ₂ -VASc = 0				
at least 1 ^a	56.7	64.7	55.9	0.4859
vitamin K antagonists, %	46.6	58.8	45.3	0.2893
NOAC, %	10.1	5.9	10.5	>0.999 ^a
CHA ₂ DS ₂ -VASc = 1				
at least 1 ^a	72.9	78.3	71.9	0.3026
vitamin K antagonists, %	62.7	71.7	61.0	0.1170
NOAC, %	10.5	6.7	11.2	0.2910
CHA ₂ DS ₂ -VASc ≥2				
at least 1 ^a	82.7	83.3	82.6	0.7656
vitamin K antagonists, %	74.8	76.8	74.5	0.3467
NOAC, %	8.0	6.7	8.2	0.3519
CHA ₂ DS ₂ -VASc ≥3				
at least 1 ^a	70.9	75.6	70.3	0.4652
vitamin K antagonists, %	76.8	76.3	76.9	0.8425
NOAC, %	7.7	7.9	7.6	0.8734

stroke. Undertreatment in high-risk groups may be partly explained by the presence of contraindications to the use of OACs, but even then it can be justified only in 13% to 18% of patients.^{15,16} Adherence to the ESC guidelines improved slightly over time (from 70% in the AFNET and Euro surveys to roughly 80% in the present registry), but still remains an important issue.¹⁷⁻¹⁹ Furthermore, also in-hospital undertreatment with OACs seems to be progressively more pronounced among Polish inpatients with progressively higher bleeding risk. Current guidelines recommend only some caution and regular review in patients with high bleeding risk who are anticoagulated, in no way suggesting a HAS-BLED score of 3 or higher as a contraindication for the use of OACs.⁷

Fourth, as many as two-thirds of Polish patients with very low risk of stroke (CHA₂DS₂-VASc = 0) were still treated with an OAC during their in-hospital visit, and a similar proportion was discharged home on an OAC. These numbers were similar in patients enrolled in other EU countries. As the current ESC guidelines recommend anticoagulation within periprocedural periods in patients undergoing cardioversion or AF ablation regardless of CHA₂DS₂-VASc scores (including 4-week postcardioversion and 8-week postablation anticoagulation), these numbers may at least partially be justified.^{7,13} But even taking into account proportions of Polish patients in whom cardioversion (21% pharmacological and 25% electrical, throughout all CHA₂DS₂-VASc scores) or ablation was planned (13%), it still seems that a substantial proportion of patients is overtreated with OACs in Poland, despite having a very low stroke risk.

Finally, similar to other EU countries, antiplatelet therapy was still used in almost one-third of AF inpatients in Poland and a similar proportion was discharged from the hospital on antiplatelet agents. Antiplatelet drugs are not recommended by the ESC as effective antithrombotic agents to protect against stroke in AF patients.⁷ Coronary artery disease may be responsible for such high proportions, and this factor was a significant determinant of antiplatelet drug use in AF subjects, also in the Eastern Europe, as previously shown.²⁰ This may be particularly true in Polish participants of the registry, almost 50% of whom (significantly more than in other EU countries, 35%) had diagnosis of coronary artery disease.

Limitations Presented data come from a registry, and the inclusion of consecutive AF patients was one of its main goals. However, no screening-log was required by the registry protocol, thus selection bias or inclusion of nonconsecutive patients cannot be excluded. The present analysis focuses on baseline, in-hospital (or during outpatient visit), and at-discharge data only, and outcome data from the EORP-AF Pilot registry will become available in due course. The relatively small number of patients in some subgroups (for example

TABLE 6 Antithrombotic therapy according to CHA₂DS₂-VASc and HAS-BLED scores (continued from the previous page)

Variable	All patients (n = 3119)	Polish patients (n = 419)	Other EU countries (n = 2700)	P value
treatment strategies at discharge				
HAS-BLED <3				
at least 1 ^a	81.5	82.6	81.3	0.5583
vitamin K antagonists, %	72.9	75.9	72.4	0.1622
NOAC, %	8.7	7.0	9.0	0.2005
HAS-BLED ≥3				
at least 1 ^a	70.9	75.6	70.3	0.4652
vitamin K antagonists, %	64.0	71.1	63.2	0.2934
NOAC, %	6.9	4.4	7.2	0.7561 ^a

The Kruskal–Wallis test was used for quantitative data. The χ^2 or Fisher exact test (a) was used for binary variables. For qualitative variables with more than 2 possibilities, the Monte Carlo estimates of the exact P values were used.

a at least 1 antithrombotic drug from the following list: vitamin K antagonists, acetylsalicylic acid, indobufen, clopidogrel, prasugrel, ticagrelor, ticlopidine, dabigatran, rivaroxaban, apixaban, unfractionated heparin, low-molecular weight heparin, fondaparinux.

those with a CHA₂DS₂-VASc score of 0 or with a HAS-BLED score of 3 or higher), which led to significant inhomogeneity of the groups, may have potentially underpowered some significant associations. Differences in baseline patients' characteristics and diverse reference level of enrolling sites in Poland versus other countries made direct interregional comparisons impossible. Therefore, differences in treatment strategies between Poland and other EU countries should be perceived at best as hypotheses-generating.

In conclusion, a rhythm control-oriented strategy was more frequent in Polish centers, with more invasive approach preferred in cardiology wards. Similar to other EU countries, the compliance with the ESC guidelines regarding anticoagulation in AF patients could be improved in Poland, as there was undertreatment in a significant proportion of patients at high risk of stroke, and overtreatment in the low-risk group. Differences between the types of recruiting centers in Poland and other countries might have influenced the results.

Contribution statement RL and KM were responsible for the concept of the study, interpretation of data, drafting the article, and final approval of the version to be submitted. MM, MJ, GO, JD, WS, AF, and AS were responsible for acquisition of data, revising the manuscript critically for important intellectual content, and final approval of the version to be submitted. CL was responsible for the analysis and interpretation of data, drafting the article, and final approval of the version to be submitted. GYHL was responsible for the design and concept of the study, interpretation of data, drafting the article, and final approval of the version to be submitted. ZK was responsible for the design and concept of

the study, interpretation of data, revising the manuscript critically for important intellectual content, and final approval of the version to be submitted.

Acknowledgments The authors would like to thank the EURObservational Research Programme (EORP) team, national coordinators, and investigators for their contribution to performing the survey. Members of the Executive Steering Committee, Steering Committee (National Coordinators), and Investigators were provided in the primary paper describing the baseline data, by Lip et al.⁹

Since the start of the EORP, the following companies have supported the program: Abbott Vascular Int. (2011–2014), Amgen (2012–2015), AstraZeneca (2014–2017), Bayer Pharma AG (2013–2015), Boehringer Ingelheim (2013–2016), Boston Scientific (2010–2012), The Bristol Myers Squibb and Pfizer Alliance (2014–2016), The Alliance Daiichi Sankyo Europe GmbH and Eli Lilly and Company (2014–2017), Gedeon Richter Plc. (2014–2017), Menarini Int. Op. (2010–2012), MSD–Merck & Co. (2011–2014), Novartis Pharma AG (2014–2017), ResMed (2014–2016), Sanofi (2010–2011), and SERVIER (2012–2015).

Conflict of interests GYHL is a chairman of the Scientific Documents Committee, European Heart Rhythm Association (EHRA); reviewer for guidelines and position statements from ESC, EHRA, NICE; member of steering committees for various Phase II and III studies, Health Economics & Outcomes Research; investigator in various clinical trials in cardiovascular disease, including those on antithrombotic therapies in atrial fibrillation, acute coronary syndrome, and lipids; consultant for Bayer/Jensen J&J, Astellas, Merck, Sanofi, BMS/Pfizer, Biotronik, Medtronic, Portola, Boehringer Ingelheim, Microlife, and Daiichi-Sankyo; speaker for Bayer, BMS/Pfizer, Medtronic, Boehringer Ingelheim, Microlife, Roche, and Daiichi-Sankyo.

Supplementary material online Supplementary material is available with the online version of the article at www.pamw.pl.

REFERENCES

1 Go AS, Hylek EM, Phillips KA, et al. Prevalence of diagnosed atrial fibrillation in adults: national implications for rhythm management and stroke prevention: the AnTicoagulation and Risk Factors in Atrial Fibrillation (ATRIA) Study. *JAMA*. 2001; 285: 2370-2375.

2 Lin HJ, Wolf PA, Kelly-Hayes M, et al. Stroke severity in atrial fibrillation. The Framingham Study. *Stroke*. 1996; 27: 1760-1764.

3 Reiffel JA. Atrial fibrillation and stroke: epidemiology. *Am J Med*. 2014; 127: e15-16.

4 Grond M, Jauss M, Hamann G, et al. Improved detection of silent atrial fibrillation using 72-hour Holter ECG in patients with ischemic stroke: a prospective multicenter cohort study. *Stroke*. 2013; 44: 3357-3364.

5 Glotzer TV, Hellkamp AS, Zimmerman J, et al. Atrial high rate episodes detected by pacemaker diagnostics predict death and stroke: report of the Atrial Diagnostics Ancillary Study of the MOde Selection Trial (MOST). *Circulation*. 2003; 107: 1614-1619.

- 6 Friberg L, Engdahl J, Frykman V, et al. Population screening of 75- and 76-year-old men and women for silent atrial fibrillation (STROKESTOP). *Europace*. 2013; 15: 135-140.
- 7 Camm AJ, Kirchhof P, Lip GY, et al. European Heart Rhythm Association; European Association for Cardio-Thoracic Surgery. Guidelines for the management of atrial fibrillation: the Task Force for the Management of Atrial Fibrillation of the European Society of Cardiology (ESC). *Eur Heart J*. 2010; 31: 2369-429.
- 8 Camm AJ, Lip GY, De Caterina R, et al. ESC Committee for Practice Guidelines (CPG). 2012 focused update of the ESC Guidelines for the management of atrial fibrillation: an update of the 2010 ESC Guidelines for the management of atrial fibrillation. Developed with the special contribution of the European Heart Rhythm Association. *Eur Heart J*. 2012; 33: 2719-2747.
- 9 Lip G, Laroche C, Dan GA, et al. A prospective survey in European Society of Cardiology member countries of atrial fibrillation management: baseline results of EURObservational Research Programme Atrial Fibrillation (EORP-AF) Pilot General Registry. *Europace* 2014; 16: 308 - 319.
- 10 Lip GY, Laroche C, Ioachim PM, et al. Prognosis and treatment of atrial fibrillation patients by European cardiologists: one year follow-up of the EURObservational Research Programme Atrial Fibrillation General Registry Pilot Phase (EORP-AF Registry). *Eur Heart J*. 2014; 35: 3365-3376.
- 11 Stepińska J, Marona M, Greenlaw N, et al. Polish Clarify Investigators. Heart rate and the use of beta-blockers in stable outpatients with coronary artery disease: Polish baseline results of the CLARIFY registry. *Kardiol Pol*. 2014; 72: 854-855.
- 12 Arribas F, Auricchio A, Boriani G, et al. Statistics on the use of cardiac electronic devices and electrophysiological procedures in 55 ESC countries: 2013 report from the European Heart Rhythm Association (EHRA). *Europace*. 2014; 16: i1-i78.
- 13 Calkins H, Kuck KH, Cappato R, et al. Heart Rhythm Society Task Force on Catheter and Surgical Ablation of Atrial Fibrillation. 2012 HRS/EHRA/ECAS Expert Consensus Statement on Catheter and Surgical Ablation of Atrial Fibrillation: Recommendations for Patient Selection, Procedural Techniques, Patient Management and Follow-up, Definitions, Endpoints, and Research Trial Design A report of the Heart Rhythm Society (HRS) Task Force on Catheter and Surgical Ablation of Atrial Fibrillation. *Heart Rhythm*. 2012; 9: 632-696.
- 14 Di Biase L, Burkhardt JD, Santangeli P, et al. Periprocedural stroke and bleeding complications in patients undergoing catheter ablation of atrial fibrillation with different anticoagulation management: results from the Role of Coumadin in Preventing Thromboembolism in Atrial Fibrillation (AF) Patient. *Circulation*. 2014; 129: 2638-2644.
- 15 O'Brien EC, Holmes DN, Ansell JE, et al. Physician Practices Regarding Contraindications to Oral Anticoagulation in Atrial Fibrillation. Findings From the Outcomes Registry for Better Informed Treatment of Atrial Fibrillation (ORBIT-AF) Registry. *Am Heart J*. 2014; 167: 601-609.
- 16 Samsa GP, Matchar DB, Goldstein LB, et al. Quality of anticoagulation management among patients with atrial fibrillation: results of a review of medical records from 2 communities. *Arch Intern Med*. 2000; 160: 967-973.
- 17 Nieuwlaat R, Capucci A, Camm AJ, et al. Atrial fibrillation management: a prospective survey in ESC member countries: the Euro Heart Survey on atrial fibrillation. *Eur Heart J*. 2005; 26: 2422-2434.
- 18 Nieuwlaat R, Capucci A, Lip GY, et al. Antithrombotic treatment in real-life atrial fibrillation patients: a report from the Euro Heart Survey on atrial fibrillation. *Eur Heart J*. 2006; 27:3018-3026.
- 19 Kirchhof P, Nabauer M, Gerth A, et al. Impact of the type of centre on management of AF patients: surprising evidence for differences in antithrombotic therapy decisions. *Thromb Haemost*. 2011; 105: 1010-1023.
- 20 Lip GY, Laroche C, Boriani G, et al. Regional differences in presentation and treatment of patients with atrial fibrillation in Europe: a report from the EURObservational Research Programme Atrial Fibrillation (EORP-AF) Pilot General Registry. *Europace*. 2015; 17: 194-206.

Strategie leczenia chorych z migotaniem przedsionków w Polsce i w Europie

Analiza danych z rejestru EURObservational Research Programme-Atrial Fibrillation General Registry Pilot Phase

Radosław Lenarczyk¹, Katarzyna Mitreǳa¹, Michał Mazurek¹, Marianna Janion², Grzegorz Opolski³, Jarosław Drożdż⁴, Witold Streb¹, Artur Fuglewicz⁵, Adam Sokal¹, Cécile Laroche⁶, Gregory Y.H. Lip⁷, Zbigniew Kalarus¹

1 Kliniczny Oddział Kardiologii, Wrodzonych Wad Serca i Elektroterapii, Śląski Uniwersytet Medyczny, Śląskie Centrum Chorób Serca, Zabrze

2 II Klinika Kardiologii, Wydział Medycyny i Nauk o Zdrowiu, Uniwersytet Jana Kochanowskiego, Kielce

3 I Klinika Kardiologii, Uniwersytet Medyczny w Warszawie, Warszawa

4 Klinika Kardiologii, Katedra Kardiologii i Kardiologii, Uniwersytet Medyczny w Łodzi

5 Klinika Kardiologii, Uniwersytet Medyczny we Wrocławiu, Szpital Wojskowy, Wrocław

6 EURObservational Research Programme Department, Europejskie Towarzystwo Kardiologiczne, Sophia Antipolis, Francja

7 University of Birmingham Centre for Cardiovascular Sciences, City Hospital, Birmingham, Wielka Brytania

SŁOWA KLUCZOWE

leczenie
przeciwwskrzepowe,
migotanie
predsionków, różnice
regionalne, udar
mózgu, zalecenia

STRESZCZENIE

WPROWADZENIE Pomimo trwających działań Europejskiego Towarzystwa Kardiologicznego (European Society of Cardiology – ESC) mających na celu ujednolicenie postępowania u chorych z migotaniem przedsionków (*atrial fibrillation* – AF) w Europie, możliwe są lokalne różnice w przestrzeganiu wytycznych.

CELE Celem badania było porównanie strategii leczenia w zależności od wyjściowej charakterystyki pacjentów z AF między Polską a innymi krajami członkowskimi Unii Europejskiej (UE).

PACJENCI I METODY Analizowano wyjściowe dane pacjentów z międzynarodowego rejestru ESC – EURObservational Research Programme-Atrial Fibrillation General Registry Pilot Phase. Badaną grupę stanowiło kolejnych 3119 pacjentów ze stwierdzonym w ciągu ostatniego roku AF, których włączono do rejestru w 67 ośrodkach z 9 krajów, w tym 419 pacjentów zrekrutowanych w 15 polskich ośrodkach.

WYNIKI Strategia kontroli rytmu była częściej stosowana w Polsce niż w innych krajach EU (20,8% vs 11,9%; $p < 0,0001$). Ablacja przeskórna AF również była częściej stosowana na polskich oddziałach kardiologicznych (13,9% vs 8,3%; $p = 0,0017$), rzadziej natomiast podawano amiodaron przy wypisie ze szpitala (12,0% vs 22,7%; $p < 0,0001$). Polscy pacjenci z ryzykiem ≥ 2 pkt w skali CHA_2DS_2 -VASc otrzymywali w szpitalu leki z grupy antagonistów witaminy K (*vitamin K antagonists* – VKA) i antykoagulanty nie-VKA rzadziej niż w innych krajach EU (61,1% vs 79,0%; $p < 0,0001$), ale przy wypisie byli leczeni przeciwwskrzepowo z podobną częstością jak w innych krajach (83,3% vs 82,6%).

WNIOSKI Ukierunkowana na kontrolę rytmu strategia leczenia chorych z AF z wykorzystaniem ablacji na oddziałach kardiologicznych jest w Polsce częstsza niż w innych krajach EU. Podobnie jak w innych krajach EU, stosowanie się do zaleceń ESC dotyczących antykoagulacji chorych z AF jest w Polsce nieoptymalne. Istotny odsetek chorych obciążonych dużym ryzykiem udaru nie jest leczony przeciwwskrzepiwnie, ale jednocześnie duża grupa chorych o małym ryzyku otrzymuje takie leczenie. Na uzyskane wyniki mogły wpłynąć różnice między Polską a innymi krajami EU pod względem profilu rekrutujących ośrodków.

Adres do korespondencji:
dr hab. n. med. Radosław
Lenarczyk, Kliniczny Oddział
Kardiologii, Wrodzonych Wad Serca
i Elektroterapii, Śląski Uniwersytet
Medyczny, Śląskie Centrum Chorób
Serca, ul. Curie-Skłodowskiej 9,
41-800 Zabrze, tel.: 32 37 33 682,
e-mail: radle@poczta.onet.pl
Praca wpłynęła: 29.11.2015.
Przyjęta do druku: 12.02.2016.
Publikacja online: 22.03.2016.
Zgłoszono sprzeczność interesów:
patrz str. 146.
Pol Arch Med Wewn. 2016;
126 (3): 138-148
doi: 10.20452/pamw.3322
Copyright by Medycyna Praktyczna,
Kraków 2016