Kardiologia Polska 2015; 73, 2: 85–93; DOI: 10.5603/KP.a2014.0165 ISSN 0022–9032

ARTYKUŁ ORYGINALNY / *ORIGINAL ARTICLE*

New oral anticoagulants for the prevention of thromboembolic complications in atrial fibrillation: a single centre experience

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Abstract

Background: Prevention of thromboembolic complications is a priority in patients with atrial fibrillation (AF). Based on the current guidelines, the role of vitamin K antagonists (VKA) in stroke prevention has decreased in favour of novel oral anticoagulants (NOAC).

Aim: To evaluate the proportion of AF patients who were prescribed a NOAC, compare populations of patients treated with VKA and NOAC, and identify factors predisposing to NOAC prescription at hospital discharge of AF patients.

Methods: A single-centre prospective study was carried out based on medical records of 550 patients who were diagnosed with non-valvular AF and discharged from a Cardiology Department from September 2012 till August 2013.

Results: Among 550 patients with AF, an oral anticoagulant (OAC) was prescribed for stroke prevention in 463 (84.2%) patients. At discharge, VKA was prescribed in 373 patients (80.6% of those treated with OAC), and NOAC was prescribed in 90 patients (19.4% of those treated with OAC). Among patients receiving NOAC, dabigatran was prescribed to 41 (45.6%) patients and rivaroxaban was prescribed to 49 (54.4%) patients. The mean CHA_2DS_2VASc scores in patients treated with VKA and NOAC were 3.8 ± 1.7 and 4.1 ± 1.7, respectively (p = NS). The mean HASBLED score in patients treated with VKA and NOAC was 2.2 ± 1.0 and 2 ± 0.9, respectively (p = NS). Patients treated with NOAC were older than patients treated with VKA (mean age 74.7 ± 11.9 vs. 70.5 ± 10.8 years, p = 0.0005). In multivariate analysis, factors associated with an increased likelihood of NOAC prescription included a history of bleeding (odds ratio [OR] 3.43), hospitalisation due to AF (OR 2.82), age ≥ 80 years (OR 2.8), paroxysmal arrhythmia (OR 1.77), and living in a rural area (OR 1.77).

Conclusions: A NOAC was used in one fifth of all hospitalised AF patients receiving anticoagulant treatment. The risk of thromboembolic and bleeding complications did not differ between AF patients treated with NOAC or VKA. Factors associated with an increased likelihood of NOAC prescription included a history of bleeding, age ≥ 80 years, paroxysmal arrhythmia, hospitalisation due to AF, and living in a rural area.

Key words: novel oral anticoagulants, atrial fibrillation, stroke

Kardiol Pol 2015; 73, 2: 85–93

INTRODUCTION

Prevention of thromboembolic complications is a priority in patients with atrial fibrillation (AF). The importance of stroke prevention has been highlighted in the 2008 American College of Cardiology (ACC)/American Heart Association (AHA) guidelines [1] and confirmed by the authors of the 2010 and 2012 European Society of Cardiology (ESC) guidelines who considered evaluation of the indications for anticoagulant therapy the initial therapeutic decision that is needed following the diagnosis of AF [2, 3]. Based on increasing evidence of the efficacy and safety of oral anticoagulants (OAC) in the prevention of thromboembolic complications and availability of novel oral anticoagulants (NOAC), experts recommend identification of AF patients who do not require anticoagulant therapy [3]. Current guidelines highlight the need for identification of really low thromboembolic risk patients (e.g., with lone AF) in

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Received: 08.01.2014 **Accepted:** 01.07.2014 **Available as AoP:** 21.08.2014

whom anticoagulant therapy is not recommended. In all other patients, anticoagulant therapy should be used, except for those in whom it is contraindicated. Based on the results of the RE-LY [4], ROCKET-AF [5], ARISTOTLE [6], and AVERROES [7] studies, direct thrombin inhibitors and factor Xa inhibitors were approved for the prevention of thromboembolic complications of AF. Based on the 2012 ESC guidelines, the role of vitamin K antagonists (VKA) has decreased in favour of NOAC. According to the current guidelines, NOAC may be considered instead of VKA in most patients with non-valvular AF in whom anticoagulation is recommended (class IIa recommendation, level of evidence A). If monitoring of VKA therapy is not feasible or it is not possible to obtain therapeutic international normalised ratio (INR) values, NOAC is indicated (class I recommendation, level of evidence B). The choice of anticoagulant therapy should be based on the evaluation of thromboembolic risk, bleeding risk, patient preference, and concomitant diseases. Apostolakis et al. [8] developed the SAMe-TT2R2 score to identify AF patients who would benefit from VKA or NOAC therapy.

The aim of our study was to evaluate the proportion of AF patients who were prescribed a NOAC, compare populations of patients treated with VKA and NOAC, and identify factors predisposing to NOAC prescription at discharge.

METHODS

We prospectively studied 639 patients hospitalised with AF in our Department of Cardiology from September 2012 till August 2013. The study group included consecutive AF patients admitted for elective procedure or as acute cases. We included those patients in whom full data were available to evaluate the risk of thromboembolic and bleeding complications according to the current scores, along with information on the prescribed anticoagulant treatment. If a patient was hospitalised several times, we evaluated data from the last hospital stay. Exclusion criteria included valvular AF and in-hospital death (Fig. 1). Valvular AF was defined as AF in patients who previously underwent any intervention, either percutaneous or surgical, due to valvular disease, or patients in whom intervention was currently indicated for valvular disease.

Thromboembolic risk was evaluated using the CHA_2DS_2-VASc score, and bleeding risk was evaluated using the HASBLED score. We also evaluated the SAMe-TT2R2 score, developed to assist in the choice of anticoagulant therapy. In the SAMe-TT2R2 score, 1 point is given for each of the following: age < 60 years, female gender, use of medications interfering with OAC, and the presence of at least 2 of the following conditions: hypertension, heart failure, diabetes, history of myocardial infarction (MI), peripheral arterial disease, pulmonary disease, and chronic kidney disease. Two points are given for smoking (currently or within the last 2 years) or race other than Caucasian. The overall score of 0–1 predicts good INR control and clinical benefits from VKA, and 2 or more points suggest benefits from NOAC therapy.

The study was approved by a local bioethics committee (Approval No. 12/2012).

Statistical analysis

We used the following statistical tests to compare differences between the two study groups: the χ^2 test and the Student *t* test for normally distributed variables, and the Mann-Whitney U test for non-normally distributed variables. To evaluate prognostic value of selected parameters, we used uni- and multivariate logistic regression analysis. $P < 0.05$ was considered statistically significant. Calculations were performed using the MedCalc software, version 12.4.0.0.

RESULTS

Among 550 patients discharged with nonvalvular AF, OAC was used (as monotherapy or combined with antiplatelet drugs) in 463 (84.2%) patients. Figure 1 summarises anticoagulation prescribed at discharge in the study group. Among patients treated with OAC, VKA was prescribed in 373 patients (80.6% of all patients prescribed OAC), and NOAC was prescribed in 90 patients (19.4% of all patients prescribed OAC). VKA was most commonly used as monotherapy (328 patients, or 87.9% of all patients prescribed VKA), and combined with antiplatelet drugs in the remaining 45 patients (12.1% of all patients prescribed VKA). During the first 6 months of our study (September 2012 to February 2013), NOAC was prescribed in 35 patients (14.2% of patients prescribed OAC), compared to 55 patients (26.3% of patients prescribed OAC) prescribed NOAC in the second half of the study period (March to August 2013) ($p = 0.0055$).

Among patients prescribed NOAC, dabigatran was used in 41/90 (45.6%) patients, and rivaroxaban was used in 49/90 (54.4%) patients. A reduced dose of NOAC (dabigatran 110 mg twice daily, rivaroxaban 15 mg once daily) was prescribed in 37/90 (41.1%) patients, more commonly among those treated with rivaroxaban (Fig. 2). The most common reason to reduce NOAC dose was age ≥ 80 years (in 30 patients), followed by creatinine clearance < 50 mL/min in 27 patients, and a high bleeding risk by the HASBLED score in 17 patients.

A retrospective evaluation of the study population using the SAMe-TT2R2 score yielded a score of 0–1 in 296 (64%) patients, and a score of 2+ in 167 (36%) patients. Figure 3 shows the SAMe-TT2R2 scores in patients treated with VKA and NOAC.

Women comprised 53.3% of patients prescribed NOAC (48/90) and 40.3% of patients prescribed VKA (150/373). A rural place of residence was found in 219 (58.7%) patients prescribed VKA and 64 (71.1%) patients prescribed NOAC ($p = 0.0627$). In our study population, the largest group were patients admitted for elective procedures (36.4% of patients prescribed VKA and 38.9% of patients prescribed NOAC). Patients prescribed NOAC were significantly more frequently admitted for an acute AF episode compared to

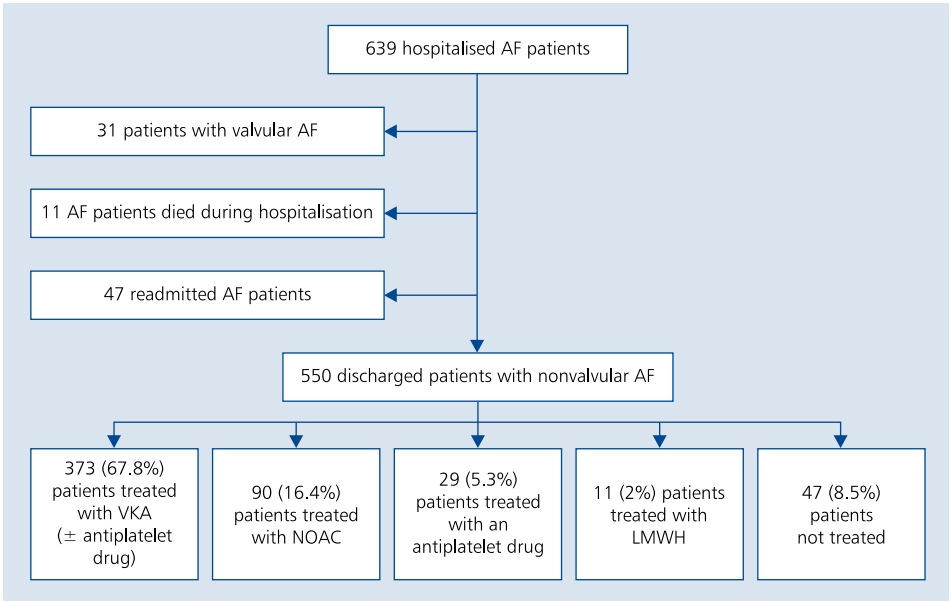

Figure 1. Antithrombotic therapy in patients with nonvalvular atrial fibrillation (AF); NOAC — novel oral anticoagulant; LMWH — low-molecular-weight heparin; VKA — vitamin K antagonist

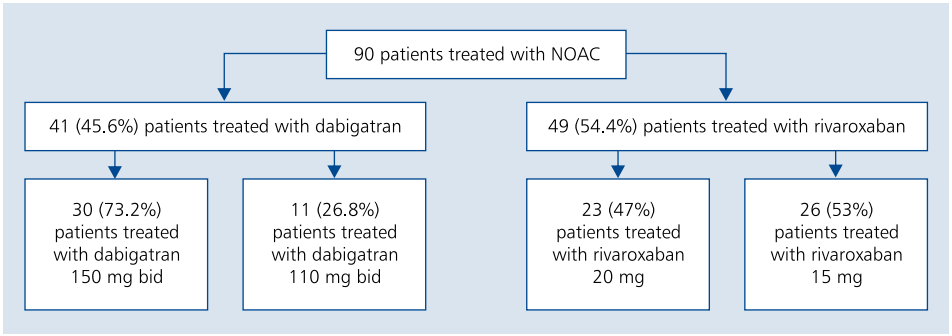

Figure 2. Use of full and reduced doses of novel oral anticoagulants (NOAC) for the prevention of thromboembolic complications in patients with nonvalvular atrial fibrillation; bid — twice daily

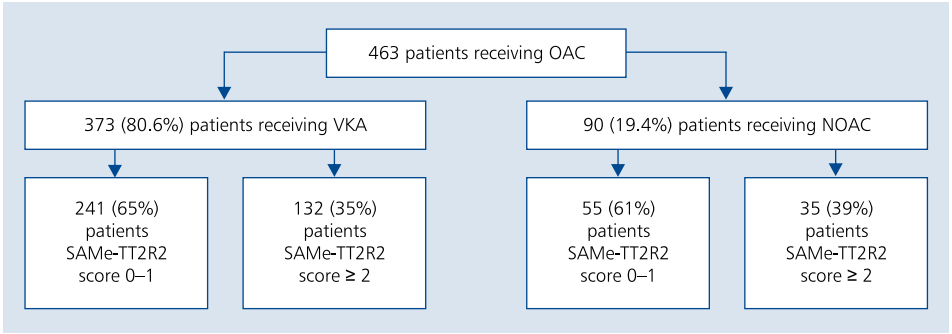

Figure 3. Retrospective evaluation of patients receiving oral anticoagulants using the SAMe-TT2R2 score; NOAC — novel oral anticoagulant; OAC — oral anticoagulant; VKA — vitamin K antagonist

those prescribed VKA (21.1% vs. 8%, p = 0.0006). Paroxysmal AF was present in 141/373 (37.8%) patients prescribed VKA and 48/90 (53.3%) patients prescribed NOAC (p = 0.0101). Permanent AF was more common in patients prescribed VKA (171 patients, 45.8%) than in patients prescribed NOAC (31 patients, 34.4%) but the difference was not significant

Table 1. Study group characteristics

	Patients receiving OAC (n = 463)	Patients receiving VKA (n = 373)	Patients receiving NOAC (n = 90)	P
Mean age	71.3	70.5	74.7	0.0005
Female gender	198 (42.8%)	150 (40.3%)	48 (53.3%)	0.0404
Rural place of residence	283 (61.1%)	219 (58.7%)	64 (71.1%)	0.0627
AF type				
Paroxysmal	189 (40.8%)	141 (37.8%)	48 (53.3%)	0.0103
Persistent	82 (17.7%)	71 (19%)	11 (12.2%)	0.4099
Permanent	202 (43.6%)	171 (45.8%)	31 (34.4%)	0.0659
Reason for admission				
Elective procedure	167 (36.1%)	132 (35.4%)	35 (38.9%)	0.6183
Decompensation of a chronic disease	135 (29.2%)	110 (29.5%)	25 (27.8%)	0.8499
Acute coronary syndrome	36 (7.8%)	35 (9.4%)	1 (1.1%)	0.0006
Electrical cardioversion	67 (14.5%)	59 (15.8%)	8 (8.8%)	0.1327
AF episode	189 (39.9%)	141 (37.8%)	48 (53.3%)	0.0101
Other	9 (1.9%)	7 (1.9%)	2 (2.2%)	0.8108
Concomitant conditions				
Hypertension	360 (77.8%)	290 (77.7%)	70 (77.8%)	0.9040
Heart failure	243 (52.5%)	203 (54.4%)	40 (44.4%)	0.1124
History of MI	101 (27.1%)	74 (19.8%)	12 (13.3%)	0.0404
Previous CABG	27 (5.8%)	25 (6.7%)	2 (2.2%)	0.1684
Previous PCI	59 (12.7%)	54 (14.5%)	5 (5.6%)	0.0355
Diabetes	102 (22%)	83 (22.3%)	19 (21.1%)	0.3450
History of stroke/TIA/peripheral embolism	54 (11.7%)	39 (10.5%)	15 (16.7%)	0.1444
History of bleeding	20 (4.3%)	12 (3.2%)	8 (8.9%)	0.0356
Anaemia	69 (14.9%)	49 (13.1%)	20 (22.2%)	0.0441
Thrombocytopenia	66 (14.3%)	58 (15.5%)	8 (8.9%)	0.1459

AF — atrial fibrillation; CABG — coronary artery bypass grafting; MI — myocardial infarction; NOAC — novel oral anticoagulant; OAC — oral anticoagulant; PCI — percutaneous coronary intervention; TIA — transient ischaemic attack; VKA — vitamin K antagonist

(p = 0.0659). Characteristics of AF patients prescribed VKA and NOAC are shown in Table 1.

Lone AF (CHA_2DS_2VASc score of 0) was found in 9 (2.4%) patients prescribed VKA and 1 (1.1%) patient prescribed NOAC. A CHA_2DS_2VASc score of 1 was found in 37 (9.9%) patients prescribed VKA and 6 (6.7%) patients prescribed NOAC (p = NS). A CHA_2DS_2VASc score of 2 or more was found in 327 (87.7%) patients prescribed VKA and 83 (92.2%) patients prescribed NOAC (p = NS). The mean CHA_2DS_2-VASc score was 3.8 ± 1.74 among patients prescribed VKA vs. 4.1 ± 1.75 among patients prescribed VKA (p = NS). Stratification of the thromboembolic risk by the CHA_2DS_2VASc score is summarised in Figure 4.

A low bleeding risk by the HASBLED score (< 3 points) was found in 233 (62.5%) patients prescribed VKA and 63 (70%) patients prescribed NOAC (p = NS). The proportion of patients at high bleeding risk did not differ between patients prescribed VKA and NOAC (37.5% vs. 30%, respectively, p = NS). The mean HASBLED score was 2.2 ± 1.01 among patients prescribed VKA vs. 2.0 ± 0.96 among patients prescribed NOAC (p = NS).

Patients prescribed NOAC were older than those prescribed VKA (mean age 74.7 ± 11.9 years vs. 70.5 ± 10.8 years, respectively, p = 0.0005). The largest age group were patients aged 70–79 years (36.7% of patients prescribed VKA and 27.8% of patients prescribed NOAC). As many as 35/90 (38.9%) patients prescribed NOAC and 75/373 (20.2%) patients prescribed VKA were older than 80 years (Fig. 5).

In univariate analysis, predictors of NOAC therapy included a rural place of residence, paroxysmal AF, hospitalisation due to an episode of arrhythmia, age ≥ 80 years and a history of bleeding complication. These factors were significant predictors of NOAC therapy also in multivariate analysis. Female gender and anaemia were predictors of NOAC therapy in univariate but not in multivariate analysis. Patients with a history of MI were 67% less likely to receive NOAC compared to

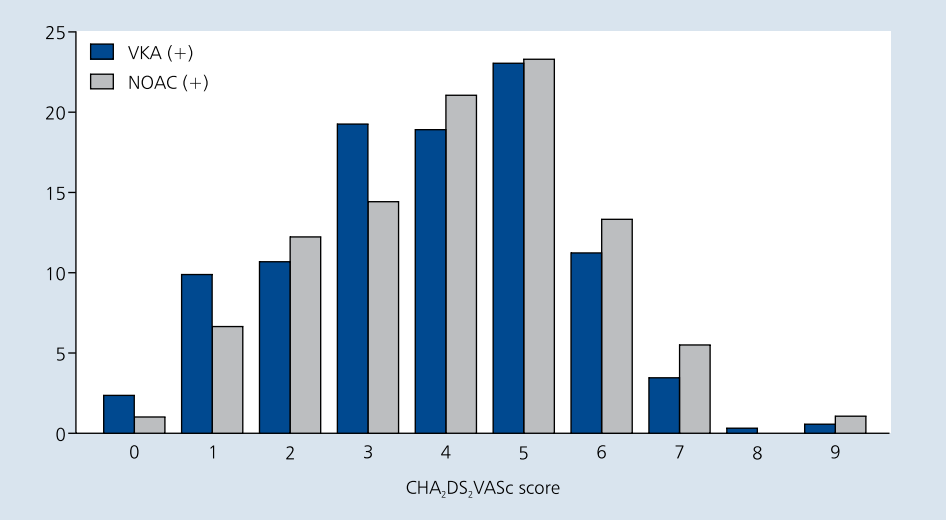

Figure 4. Thromboembolic risk by the CHA_2DS_2VASc score in patients prescribed vitamin K antagonists (VKA) and novel oral anticoagulants (NOAC) at hospital discharge

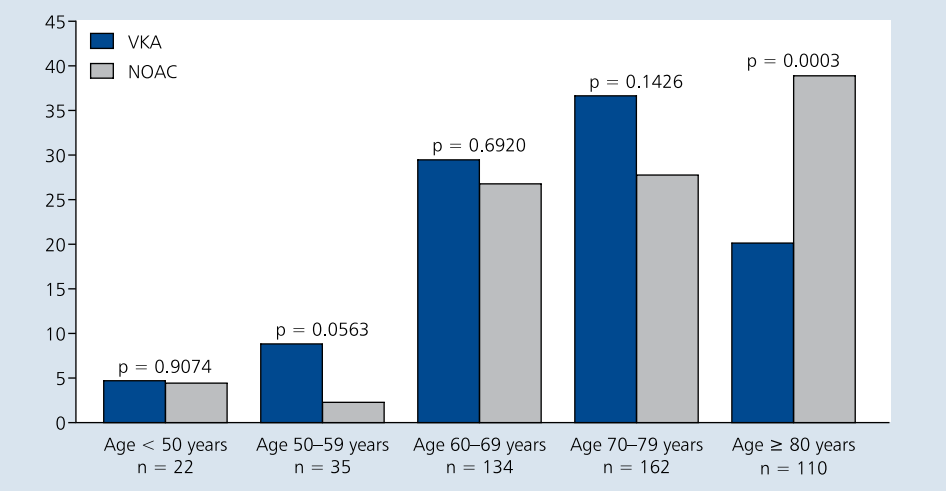

Figure 5. Use of vitamin K antagonists (VKA) and novel oral anticoagulants (NOAC) in various age groups of patients with atrial fibrillation

those with no history of MI. Interestingly, individual risk factors for bleeding complications, such as a history of bleeding or anaemia, significantly reduced the likelihood of prescribing NOAC in univariate analysis but the HASBLED score of ≥ 3 was not related to prescription of NOAC (Table 2).

DISCUSSION

In the present study, we evaluated anticoagulation in AF patients hospitalised during 1 year since presentation of the most recent ESC guidelines. In our study, anticoagulation was prescribed in 84% of discharged AF patients. During the last decade, the proportion of hospitalised AF patients who received anticoagulant therapy in large clinical studies did not exceed 70%: it was 55% in the study by Waldo et al. [9], 56% in the study by Agarwal et al. [10], 63% in the EURO HEART SURVEY [11], and 60% in the AFNET registry [12]. In the recent years, an increase is seen in the proportion of AF patients receiving anticoagulants. In the PREFER in AF study that included 7,243 patients from 7 European countries, anticoagulation to prevent stroke was used in 82% of patients, a proportion similar to that in our study [13]. A slightly lower proportion of AF patients receiving OAC (80%) was found in a pilot EuroObservational Research Programme Atrial Fibrillation (EORP-AF) registry [14]. An unexpectedly low proportion of AF patients receiving anticoagulant therapy was noted in the largest current registry of AF patients, GARFIELD. In the first cohort, recruited in 2009–2011, anticoagulation was used in 60.3% of patients, and the second cohort (2011–2013),

Table 2. Factors affecting prescription of novel oral anticoagulants at hospital discharge in patients with nonvalvular atrial fibrillation (AF) — uni- and multivariate analysis

Variable	Univariate analysis			Multivariate analysis		
	OR	95% CI	P	OR	95% CI	P
History of MI	0.41	0.2165–0.7931	0.0041	0.33	0.1647–0.6666	0.0020
Rural place of residence	1.65	1.0036–2.7315	0.0438	1.77	1.0408–3.0178	0.0351
Paroxysmal AF	1.88	1.1823–2.9907	0.0076	1.77	1.0408–3.0178	0.0042
Hospitalisation due to an AF episode	3.05	1.6313–5.7386	0.0005	2.82	1.3869–5.7418	0.0070
Age ≥ 80 years	2.77	1.6794–4.5785	0.0001	2.80	1.6115–4.8605	0.0003
History of bleeding	2.93	1.1624–7.4104	0.0227	3.43	1.2535–9.3905	0.0164
Female gender	1.70	1.0694–2.6994	0.0246	1.03	0.5946–1.7964	0.9071
Anaemia	1.89	1.0570–3.3766	0.0372	1.55	0.7663–3.1250	0.2234
Permanent AF	0.62	0.3840–1.0032	0.0515			
GFR < 60 mL/min	0.90	0.5130–1.5635	0.6982			
HASBLED score ≥ 3	0.71	0.4338–1.1727	0.1769			

CI — confidence interval; GFR — glomerular filtration rate; MI — myocardial infarction; OR — odds ratio

included 62.2% of patients who received anticoagulant therapy [15].

NOAC are increasingly commonly used in clinical practice to prevent thromboembolic complications of AF. In the present study, a NOAC was prescribed at discharge to 16.4% of AF patients. One of the earliest data on the use of NOAC to prevent thromboembolic complications of AF were reported in the American PINNACLE-AF registry that included 150,000 patients [16]. In that study, NOAC were used in 13% of patients in 2011. This relatively large proportion of patients receiving NOAC as early as in 2011 may be explained by differences in patient characteristics (outpatients) compared to our study, and also by an early approval of dabigatran for the prevention of thromboembolic complications of AF in the United States. A lower proportion of AF patients receiving NOAC compared to our study was found in the PREFER in AF study (6.1%) [13] and the EORP-AF study (8.4%) [14]. This may be explained by a larger thromboembolic risk in the present study compared to those registries. One of the evaluated risk factors for stroke is age. The mean age was 68.8 years in the pilot European EORP-AF study, 71.5 years in the PREFER in AF registry, and 71.3 years in the present study. In our study, the mean CHA_2DS_2VASc score was higher than in the PREFER in AF registry (3.9 vs. 3.4). In the GARFIELD registry, although the proportion of patients receiving OAC in the first and second cohort differed only slightly, significant changes were seen in anticoagulant therapy choices. In 2009–2011, a NOAC was used in 4.5% of patients in the GARFIELD registry, compared to 13.9% of patients in the 2011–2013 cohort [15]. At the same time, the proportion of patients receiving VKA decreased from 55.8% in the first cohort to 48.3% in the second cohort [15]. It seems that the proportion of patients receiving NOAC in the present study would be even higher if the cost factor was not an issue, limiting prescription of NOAC in all cases in which this therapy would be desirable. In the present study, an antiplatelet agent was used as monotherapy to prevent thromboembolic complications of AF in 5.3% of patients. The proportion of patients receiving antiplatelet therapy was lower compared to other studies. In the GARFIELD registry, an antiplatelet agent was used to prevent thromboembolic complications of AF in 25.3% and 25.6% of patients in the first and second cohort, respectively [15]. A detailed analysis of indications for various options of antithrombotic therapy in AF is beyond the scope of the present paper. Antiplatelet drugs are recommended in patients with AF when VKA therapy is not feasible and NOAC therapy is not available for financial reasons. This form of antithrombotic treatment is also used in patients with terminal conditions, including disseminated malignancy, and unable to function independently. Patients with contraindications for OAC are another group of candidates for antiplatelet therapy.

In the present study, a NOAC was in one fifth of patients receiving anticoagulation. We found that women were more likely to receive NOAC than VKA, as confirmed by univariate analysis showing that the female gender increased the likelihood of receiving NOAC by 70%. This was, however, not confirmed in multivariate analysis. Female gender is a variable included in the SAMe-TT2R2 score. In a metaanalysis of 6 studies, Pancholy et al. [17] evaluated residual risk of thromboembolic and bleeding complications in men and women with AF who received anticoagulant therapy. Women with AF treated with VKA were shown to have a significantly higher risk of thromboembolic events compared to men. Among patients treated with NOAC, no significant effect of gender on the rates of thromboembolic events was seen. Thus, it seems that NOAC therapy is more beneficial in women compared

to men. In addition, a higher risk of bleeding complication was seen in women treated with VKA compared to those treated with NOAC.

In our multivariate analysis, a history of bleeding was associated with more than 3-fold increased likelihood of NOAC prescription at discharge. More frequent prescription of NOAC compared to VKA in patients with a history of bleeding may be related to inability to obtain therapeutic INR values which significantly increases the risk of both bleeding and thromboembolic complications. In a metaanalysis of 12 studies, Dentali et al. [18] showed that NOAC therapy was associated with a significantly lower risk of intracranial bleeding compared to VKA (RR 0.46; 95% CI 0.39–0.56) and a trend for a lower rate of major bleeding (RR 0.86; 95% CI 0.72–1.02). Anaemia, which is another established risk factor for bleeding, was also related to an increased likelihood of NOAC prescription in univariate analysis. Of interest, variables included in the HASBLED score were related to an increased likelihood of NOAC prescription but the HASBLED score itself had no effect on the choice of OAC. According to the current guidelines, the HASBLED score itself should not deter from anticoagulant therapy but evaluation of the bleeding risk is mandatory in all AF patients, and a high risk of bleeding complications calls for more frequent evaluation of this risk and a reduction of NOAC dose.

Age > 80 years was associated with a nearly threefold increased likelihood of NOAC prescription. Patients > 80 years of age were the only age group in which NOAC were prescribed significantly more frequently than VKA. Old age is often associated with limited mobility and lack of independence which precludes appropriate INR monitoring. Easy access to INR monitoring was an important factor in the choice of OAC therapy in our study, explaining the fact that a rural place of residence was associated with a 77% increased likelihood of NOAC prescription in multivariate analysis. Use of NOAC in the elderly is not only associated with an increased patient comfort but also treatment effectiveness and safety. Age < 60 years is one of the factors included in the SAMe-TT2R2 score. It seems that also young patients, who are professionally active and more likely to travel, have problems with systematic INR monitoring and keeping a diet characterised by constant vitamin K content, and thus NOAC are more convenient than VKA also in younger subjects. However, we did not find any significant differences in the rates of VKA and NOAC prescription in young patients in our study.

Additional factors predisposing to NOAC prescription in our study were paroxysmal AF and hospitalisation due to an AF episode. NOAC are increasingly commonly used before cardioversion in AF patients. Recommendations on NOAC use before electrical cardioversion have been summarised in a joint consensus statement of the Polish Cardiac Society, Polish Neurological Society and the Working Group on Haemostasis of the Polish Society of Haematologists and Transfusiologists, based on the ESC guidelines [19].

A history of MI and the need for antiplatelet therapy were associated with a significantly lower likelihood of NOAC prescription, in accordance with the current guidelines which do not recommend combining NOAC with antiplatelet agents. In patients hospitalised due to an acute coronary syndrome, VKA were prescribed significantly more frequently than NOAC. A NOAC was used in only 1 patient hospitalised due to an acute coronary syndrome. The choice of NOAC instead of antiplatelet therapy and VKA in patients with indications for an antiplatelet agent and VKA may result from treatment individualisation based on careful analysis of the risks and benefits associated with given treatment. In 2013, European Heart Rhythm Association published practical recommendations on the use of NOAC that also included combining NOAC with antiplatelet agents [20]. In most AF patients with a history of an acute coronary syndrome (> 1 year), anticoagulation without antiplatelet therapy is recommended. It may also be considered to combine the lower dose of dabigatran (110 mg twice daily) with a low dose antiplatelet agent, particularly in patients at high thrombotic risk due to symptomatic atherosclerosis. In AF patients with a more recent history of MI (< 1 year), combined antiplatelet and anticoagulant therapy may be considered based on assessment using CHA_2DS_2VASc, HASBLED, and GRACE score. The authors of the above mentioned document highlighted that a low rivaroxaban dose (2.5 mg or 5 mg twice daily) combined with antiplatelet therapy has no documented benefits in the prevention of thromboembolic complications in AF patients.

The recently introduced SAMe-TT2R2 score may be helpful in the choice of anticoagulant therapy. When we retrospectively evaluated patients in our study, a SAMe-TT2R2 score of 0–1 was found in 65% of patients treated with VKA, and a score of ≥ 2 was found in 39% of patients treated with NOAC. Thus, a higher proportion of patients treated with VKA compared to NOAC was retrospectively found to have the SAMe-TT2R2 score consistent with the actually used therapy. In clinical practice, the choice between VKA and NOAC must be based on careful evaluation of all concomitant conditions, social history, and patient preferences, allowing evaluation of the risks and benefits associated with given treatment.

Limitations of the study

Our study was a single centre registry performed in a tertiary care cardiology centre, and thus our results cannot be extrapolated to outpatients or patients hospitalised in community hospitals.

CONCLUSIONS

1. A novel oral anticoagulant was used in one fifth of all hospitalised AF patients receiving anticoagulant treatment.

2. The risk of thromboembolic and bleeding complications did not differ between AF patients treated with NOAC or VKA.
3. Factors associated with an increased likelihood of NOAC prescription included a history of bleeding, age ≥ 80 years, paroxysmal arrhythmia, hospitalisation due to AF, and living in a rural area.

Conflict of interest: *I. Gorczyca-Michta — research grants (Boehringer-Ingelheim, Bayer); B. Wożakowska-Kapłon — fees for lectures and publications (Boehringer-Ingelheim, Bayer)*

References

1. Estes NAM, Halperin JL, Calkins H et al. ACC/AHA physician consortium 2008 clinical performance measures for adults with nonvalvular atrial fibrillation or atrial flutter. J Am Coll Cardiol, 2008; 51: 865–884.
2. Camm AJ, Kirchhof P, Lip GY et al. 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: 2369–2429.
3. Camm AJ, Lip GY, De Caterina R et al. 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. Eur Heart J, 2012; 33: 2719–2747.
4. Connolly SJ, Ezekowitz MD, Yusuf S et al.; RE-LY Steering Committee and Investigators. Dabigatran versus warfarin in patients with atrial fibrillation. N Engl J Med, 2009; 361: 1139–1151.
5. Patel MR, Mahaffey KW, Garg J et al.; ROCKET AF Investigators. Rivaroxaban versus warfarin in nonvalvular atrial fibrillation. N Engl J Med, 2011; 365: 883–891.
6. Granger CB, Alexander JH, McMurray JJ et al.; ARISTOTLE Committees and Investigators. Apixaban versus warfarin in patients with atrial fibrillation. N Engl J Med, 2011; 365: 981–992.
7. Connolly SJ, Eikelboom J, Joyner C et al. AVERROES Steering Committee and Investigators. Apixaban in patients with atrial fibrillation. N Engl J Med, 2011; 364: 806–817.
8. Apostolakis S, Sullivan RM, Olshansky B, Lip GY. Factors affecting quality of anticoagulation control among patients with atrial fibrillation on warfarin: the SAMe-TT2R2 Score. Chest, 2013; 144: 1555–1563.
9. Waldo AL, Becker RC, Tapson VF et al. Hospitalized patients with atrial fibrillation and a high risk of stroke are not being provided with adequate anticoagulation. J Am Coll Cardiol, 2005; 46: 1729–1736.
10. Agarwal S, Bennett D, Smith DJ. Predictors of warfarin use in atrial fibrillation patients in the inpatient setting. Am J Cardiovasc Drugs, 2010; 10: 37–48.
11. 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.
12. Nabauer M, Gerth A, Limbourg T et al. The Registry of the German Competence NETwork on Atrial Fibrillation: patient characteristics and initial management. Europace, 2009; 11: 423–434.
13. Kirchhof P, Ammentorp B, Darius H et al. Management of atrial fibrillation in seven European countries after the publication of the 2010 ESC Guidelines on atrial fibrillation: primary results of the PREvention oF thromboembolic events: European Registry in Atrial Fibrillation PREFER AF. Europace, 2014; 16: 6–14.
14. Lip GY, Laroche C, Dan GA et al. A prospective survey in European Society of Cardiology member countries of atrial fibrillation management: baseline results of EuroObservational Research Programme Atrial Fibrillation (EORP-AF) Pilot General Registry. Europace, 2014; 16: 308–319.
15. Kakkar AK, Mueller I, Bassand JP et al. Risk profiles and antithrombotic treatment of patients newly diagnosed with atrial fibrillation at risk of stroke: perspectives from the international, observational, prospective GARFIELD registry. PLoOne, 2013; 8: e63479.
16. Chan PS, Maddox T, Tang F et al. Practice-Level Variation in Warfarin Use Among Outpatients With Atrial Fibrillation (from the NCDR PINNACLE Program). Am J Cardiol, 2011; 108: 1136–1140.
17. Pancholy SB, Sharma PS, Pancholy DS et al. Meta-analysis of gender differences in residual stroke risk and major bleeding in patients with nonvalvular atrial fibrillation treated with oral anticoagulants. Am J Cardiol, 2014; 113: 485–490.
18. Dentali F, Riva N, Crowther M et al. Efficacy and safety of the novel oral anticoagulants in atrial fibrillation: a systematic review and meta-analysis of the literature. Circulation, 2012; 126: 2381–2391.
19. Pruszczyk P, Stępińska J, Banasiak W et al. New oral anticoagulants in the prevention of embolic complications in patients with atrial fibrillation. Polish Cardiac Society, Polish Neurological Society and Working Group on Haemostasis of the Polish Society of Haematologists and Transfusiologists consensus statement. Kardiol Pol, 2012; 70: 979–988.
20. Heidbuchel H, Verhamme P, Alings M et al. European Heart Rhythm Association Practical Guide on the use of new oral anticoagulants in patients with non-valvular atrial fibrillation. Europace, 2013; 15: 625–651.

Nowe doustne antykoagulanty w profilaktyce powikłań zakrzepowo-zatorowych migotania przedsionków: doświadczenia jednoośrodkowe

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Streszczenie

Wstęp: Prewencja powikłań zakrzepowo-zatorowych u chorych z migotaniem przedsionków (AF) jest priorytetowym działaniem w tej grupie pacjentów. Uwzględniając obowiązujące wytyczne, rola antagonistów witaminy K (VKA) w prewencji udaru mózgu zmniejszyła się na korzyść coraz silniejszej pozycji nowych doustnych antykoagulantów (NOAC).

Cel: Celem pracy była ocena częstości zalecania NOAC, porównanie populacji chorych leczonych VKA i NOAC oraz identyfikacja czynników predysponujących do przepisywania NOAC chorym z AF przy wypisie ze szpitala.

Metody: Prospektywnym jednoośrodkowym badaniem objęto dane 550 chorych wypisanych z Kliniki Kardiologii od września 2012 r. do sierpnia 2013 r. z rozpoznaniem niezastawkowego AF.

Wyniki: W grupie 550 chorych z AF u 463 (84,2%) osób w profilaktyce udaru mózgu zastosowano doustne antykoagulanty (OAC), w tym przy wypisie 373 pacjentom (80,6% chorych leczonych OAC) zalecono VKA, a 90 osobom (19,4% chorych leczonych OAC) — NOAC. W grupie chorych leczonych NOAC dabigatran zalecono 41 (45,6%) pacjentom, a riwaroksaban — 49 (54,4%) chorym. Średnia liczba punktów w skali CHA_2DS_2VASc w grupie leczonej VKA oraz w grupie leczonej NOAC wynosiła 3,8 ± 1,7 i 4,1 ± 1,7 punktów (p = NS). Średnia liczba punktów w skali HASBLED u pacjentów stosujących VKA wynosiła 2,2 ± 1,0 punktów, a u chorych leczonych NOAC — 2 ± 0,9 punktu (p = NS). Chorzy otrzymujący NOAC byli starsi od osób leczonych VKA (średnia wieku 74,7 ± 11,9 *vs*. 70,5 ± 10,8 roku; p = 0,0005). W analizie wieloczynnikowej wykazano, że następujące czynniki zwiększały szansę na zalecenie NOAC: przebyte krwawienie (OR 3,43), hospitalizacja z powodu napadu AF (OR 2,82), wiek ≥ 80 lat (OR 2,8), napadowa postać arytmii (OR 1,77) i zamieszkanie na wsi (OR 1,77).

Wnioski: Co piąty chory z AF leczony przeciwkrzepliwie otrzymywał NOAC. Pacjenci z AF leczeni NOAC lub VKA nie różnią się ryzykiem powikłań zakrzepowo-zatorowych ani ryzykiem powikłań krwotocznych. Czynnikami zwiększającymi szansę na przepisanie NOAC są: przebyte krwawienie, wiek ≥ 80 lat, napadowa postać arytmii, hospitalizacja z powodu napadu AF i zamieszkanie na wsi.

Słowa kluczowe: nowe doustne antykoagulanty, migotanie przedsionków, udar mózgu

Kardiol Pol 2015; 73, 2: 85–93

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Praca wpłynęła: 08.01.2014 r. **Zaakceptowana do druku:** 01.07.2014r. **Data publikacji AoP:** 21.08.2014 r.