EDITORIAL

Health care facility type–related challenges in the management of stroke risk in patients with atrial fibrillation: practical implications

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The use of oral anticoagulation (OAC) is essential for optimal prevention of ischemic stroke and other thromboembolic events in patients with atrial fibrillation (AF) and at least 1 additional non–sex-related risk factor for thromboembolic events,[1] whereas female sex should be regarded as a thromboembolic risk modifier rather than an independent risk factor for stroke.[2] Current international guidelines on AF clearly give preference to the non–vitamin K antagonist oral anticoagulants (NOACs; ie, dabigatran, rivaroxaban, apixaban, or edoxaban), which are more convenient and generally safer compared with vitamin K antagonists (VKAs).[1,3] Of note, in the setting of limited availability of NOACs (eg, a restrictive reimbursement policy), or in case of the patient's willingness to stay on a VKA, those less likely to have a good quality of anticoagulation with VKAs can be identified using the SAMe-TT_2R_2 score.[1,4]

Numerous advances in the overall management of AF have been recently effectively summarized into the Atrial fibrillation Better Care (ABC) pathway: Avoid stroke (optimize stroke prevention, ie, use OAC), Better symptom management (treat symptoms using rate or rhythm control), and Cardiovascular and comorbidity risk reduction, proposing an integrated approach to AF management and emphasizing the need for adequate stroke prevention as a first-line priority.[4] Owing to a substantial improvement in the awareness of optimal AF-related stroke risk management, the overall use of OAC (especially NOACs) in patients with AF has been steadily increasing in the recent years.[5]

In parallel with the increasing use of OAC, many important insights have been gained, such as the significance of good quality of anticoagulation with VKAs, as measured by the time in therapeutic range (TTR); a poor TTR of less than 65% to 70% has been associated with increased risk of stroke, bleeding, and all-cause death.[6] However, good TTR is difficult to maintain on a long-term basis due to numerous food and drug-drug interactions of VKAs, necessitating regular laboratory monitoring of anticoagulation intensity[7] and frequent VKA dose adjustments, which may be challenging both for physicians and for patients. In contrast to VKAs, NOACs have fewer drug-drug and no food interactions and are used in fixed doses without the need for regular laboratory monitoring of anticoagulation.[8] However, the use of NOACs has brought up the issue of adherence to treatment, which is more relevant with NOACs in comparison with VKAs due to much shorter half-lives and rapid onset and offset of action of NOACs.[8-11] Optimal method (or methods) for the assessment of adherence is still under research, but available evidence suggests that adherence to NOACs can be at least partly improved by patient education and active support.[9,10]

Despite increasing overall OAC use and a body of evidence showing (or suggesting) a positive net clinical benefit of OAC in specific AF patient groups, many high-risk patients (such as the elderly, patients with chronic kidney disease, those requiring concomitant antithrombotic therapy for various forms of coronary artery disease, patients with a history of stroke or major bleeding) are often denied OAC, most commonly due to the physicians' fear of OAC-related bleeding and knowledge gaps.[1,8] These insights have generated various educational activities aiming to improve the overall stroke risk management in AF patients, including the recently proposed multifaceted intervention to improve treatment with

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OAC, directed at both patients and health care providers, which has resulted in a significant absolute increase (9.1%) in the proportion of AF patients treated with OAC in an interventional, cluster-randomized trial.[12]

On the health care provider side, treatment decisions regarding the use of OAC in AF patients to prevent thromboembolic complications are largely influenced by the physicians' specialty, their perceptions (or misperceptions) of the net clinical benefit associated with OAC use for effective stroke prevention, and variable knowledge gaps. Indeed, a multinational study conducted by the European Society of Cardiology to assess the educational needs among cardiologists, general practitioners/family physicians, and neurologists with respect to the essential aspects of AF management reported 8 key knowledge gaps and system barriers across all domains of AF care.[13] These included a lack of appropriate stroke and bleeding risk assessment (especially among neurologists and general practitioners/family physicians) and considerable uncertainty in the management of OAC in complex patients among all studied specialties. Since guideline-adherent management of AF patients has been shown to result in improved outcomes compared with guideline-nonadherent treatments,[1,8,9] this study provided relevant information for targeted educational efforts in the future.

In this issue of *Polish Archives of Internal Medicine*, Bednarski et al[14] reported a retrospective comparison of clinical characteristics of AF inpatients treated with OAC in 2 different Polish health care facilities: a district hospital (n = 862) and an academic hospital (n = 2666) participating in the observational CRAFT study (ClinicalTrial.gov identifier, NCT02987062) on AF patients treated with OAC between 2011 and 2016. Patients managed in the district hospital were older, had more underlying comorbidities (including a history of stroke, heart failure, myocardial infarction, known peripheral artery disease, diabetes, chronic obstructive pulmonary obstructive disease, previous bleeding event, or anemia at baseline), and the proportion of female patients and those with permanent AF was much higher compared with the academic hospital cohort. Both stroke and bleeding risk profiles were more unfavorable among the district hospital patients compared with those treated in the academic hospital, as measured by the CHA_2DS_2-VASc score (mean [SD], 4.6 [1.7] vs 3.05 [2.0]) and HAS-BLED score (mean [SD], 0.6 [0.7] vs 0.4 [0.6]), respectively. In other words, physicians managing AF-related stroke risk in patients treated in the district hospital were facing different requirements (and challenges) in comparison with physicians practicing in the academic hospital.

Although the authors did not provide any information on how the health care system is organized in Poland, it could be assumed that the academic hospital was able to provide the full range of AF-related services, including AF ablation, while the options for AF management could have been limited in the district hospital. This could have contributed, at least partly, to the observed differences in the patient's risk profile at baseline and a higher proportion of anticoagulated AF patients at low-to-moderate stroke risk in the academic hospital. While 26.9% of the patients in the academic hospital had a CHA_2DS_2-VASc score of 0 to 1, such patients comprised only 4.5% of the district hospital group. Unfortunately, the distribution of specific stroke risk factors across the CHA_2DS_2-VASc score strata was not provided, thus precluding the assessment of guideline-adherent OAC use in this study.

Interestingly, the use of VKAs at discharge was significantly more prevalent in the academic hospital (61.1%) than in the district one (39.6%), which could have resulted from the lack of randomized data on the optimal periprocedural management with NOACs during the study period, as the authors proposed. Among NOACs, rivaroxaban was more commonly used than dabigatran in both district (43.5% and 16.9%, respectively) and academic hospitals (25.3% and 13.4%, respectively). No information has been provided on the apixaban status in the study period, but the authors offered a plausible explanation of the more prevalent use of NOACs among the district hospital patients, which they attributed to the higher stroke and bleeding risks in these patients compared with those managed in the academic hospital, as well as the better safety of NOACs compared with VKAs.

Notwithstanding all limitations of its retrospective observational design[15] and imbalance in the size of the compared groups, this study sheds light on another important aspect that needs to be considered when conceiving a targeted educational intervention. In addition to the specialty and assumed expertise (or identified knowledge gaps) among physicians managing patients with AF, the type of health care facility being associated with a greater prevalence of AF patients with certain risk profiles could strongly influence the unmet education needs specific for the particular center (or center type). An educational intervention addressing these health care facility-specific requirements would likely be more effective than a more generally tailored one-size-fits-all educational activity, but further research is needed to confirm this hypothesis. Despite recent substantial improvements in the prevention of AF-related thromboembolic complications, there is still a great need for well-designed, focused, and effective education of both physicians and patients.

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REFERENCES

1 Lip G, Freedman B, De Caterina R, Potpara, TS. Stroke prevention in atrial fibrillation: Past, present and future. Comparing the guidelines and practical decision-making. Thromb Haemost. 2017; 117: 1230-1239.

2 Nielsen PB, Skjoth F, Overvad TF, et al. Female sex is a risk modifier rather than a risk factor for stroke in atrial fibrillation: should we use a CHA2DS2-VA score rather than CHA2DS2-VASc? Circulation. 2018; 137: 832-840.

3 Potpara TS. Comparing non-vitamin K antagonist oral anticoagulants (NOACs) to different coumadins: the win-win scenarios. Thromb Haemost. 2018. doi:10.1055/s-0038-1641166. [Epub ahead of print].

4 Lip GYH. The ABC pathway: an integrated approach to improve AF management. Nature reviews. Cardiology. 2017; 14: 627-628.

5 Hsu JC, Akao M, Abe M, et al. International Collaborative Partnership for the Study of Atrial Fibrillation (INTERAF): rationale, design, and initial descriptives. J Am Heart Assoc. 2016; 5.

6 Bonde AN, Lip GYH, Kamper AL, et al. renal function, time in therapeutic range and outcomes in warfarin-treated atrial fibrillation patients: a retrospective analysis of nationwide registries. Thromb Haemost. 2017; 117: 2291-2299.

7 van den Besselaar AM, Biedermann JS, van der Meer FJ, et al. Control of anticoagulation with vitamin K antagonists: overestimation of median time in therapeutic range when assessed by linear interpolation. Thromb Haemost. 2016; 116: 679-686.

8 Steffel J, Verhamme P, Potpara TS, et al. The 2018 European Heart Rhythm Association Practical Guide on the use of non-vitamin K antagonist oral anticoagulants in patients with atrial fibrillation. Eur Heart J. 2018; 39: 1330-1393.

9 Lip GYH, Lane DA, Potpara TS. Innovative strategies to improve adherence to non-vitamin K antagonist oral anticoagulants for stroke prevention in atrial fibrillation. Eur Heart J. 2018; 39: 1404-1406.

10 Raparelli V, Proietti M, Cangemi R, et al. Adherence to oral anticoagulant therapy in patients with atrial fibrillation. Focus on non-vitamin K antagonist oral anticoagulants. Thromb Haemost. 2017; 117: 209-218.

11 Martinez C, Katholing A, Wallenhorst C, Freedman SB. Therapy persistence in newly diagnosed non-valvular atrial fibrillation treated with warfarin or NOAC. A cohort study. Thromb Haemost. 2016; 115: 31-39.

12 Vinereanu D, Lopes RD, Bahit MC, et al. A multifaceted intervention to improve treatment with oral anticoagulants in atrial fibrillation (IMPACT-AF): an international, cluster-randomised trial. Lancet. 2017; 390: 1737-1746.

13 Heidbuchel H, Dagres N, Antz M, et al; European Society of Cardiology (ESC) and European Heart Rhythm Association (EHRA). Major knowledge gaps and system barriers to guideline implementation among European physicians treating patients with atrial fibrillation: a European Society of Cardiology international educational needs assessment. Europace. Europace. 2018 Mar 12. doi:10.1093/europace/euy039. [Epub ahead of print].

14 Bednarski J, Balsam P, Tyminska A, et al. District versus academic hospitals: differences in the clinical characteristics of patients with atrial fibrillation without valvular heart disease treated with oral anticoagulants. Pol Arch Intern Med. 2018; 128: 274-279.

15 Potpara TS, Lip GY. Postapproval observational studies of non-vitamin K antagonist oral anticoagulants in atrial fibrillation. JAMA. 2017; 317: 1115-1116.