

Atrial Fibrillation

Stroke prevention and symptom control in atrial fibrillation—handling a global and major health crisis

Axel Brandes^{a,b,*} and Nedim Tojaga^a

^aDepartment of Cardiology, Esbjerg Hospital – University Hospital of Southern Denmark, Esbjerg, Denmark

^bDepartment of Regional Health Research, University of Southern Denmark, Odense, Denmark



Atrial fibrillation (AF) is the most frequent arrhythmia worldwide. The number of cases in Europe is expected to double over the next three decades.¹ AF is independently associated with an increased risk of mortality, heart failure, and stroke, which is the most devastating consequence of AF.¹ Up to one-third of all ischaemic strokes are attributed to AF.² Cardioembolic strokes are usually severe, often recurrent and fatal, or at least permanently disabling.^{1,3} Of note, stroke or transient ischaemic attack (TIA) is the first manifestation of AF in 11.5–24% of all patients with stroke or TIA.² Heart failure (HF) is present in 20–30% of AF patients, either as cause or consequence of AF.¹ Furthermore, AF is associated with increased risk of cognitive decline and dementia, irrespective of a history of stroke.¹ Even if AF can be asymptomatic, about two-thirds of AF patients have symptoms, reduced functional capacity, and significantly impaired quality of life (QoL).⁴ Moreover, AF is associated with an increased rate of hospitalisations, imposing a significant economic burden on the healthcare system.^{1,5}

To improve the care of AF patients, the concept of integrated, holistic AF management with a structured multidisciplinary approach has been developed and is strongly recommended in current guidelines. Its central parts—stroke prevention, symptom control, and optimal treatment of risk factors and underlying conditions—have been condensed into the Atrial fibrillation Better Care (ABC) pathway.¹ Two papers published in *The Lancet Regional Health—Europe* for the Series on “Atrial Fibrillation” focus on stroke prevention and symptom control through rate and rhythm management, which are cornerstones of integrated AF management.^{6,7} Stroke prevention and symptom relief are important factors for caregivers and patients together to consider when making decisions about tailored, individual management of AF.

Chao and colleagues provide a comprehensive overview and appraisal of the contemporary approach to stroke prevention in AF patients, representing the “A” component of the Atrial fibrillation Better Care (ABC) pathway.⁶ First, the authors describe the steps for a holistic approach for risk assessment and management of AF and underline the importance of a simple, albeit comprehensive approach as reflected in the ABC pathway. Substantial progress has been made in this domain over the past decades. Starting in the 1990s, a number of studies and meta-analyses showed that oral anticoagulant (OAC) treatment with dose-adjusted warfarin markedly reduced stroke and mortality risk in AF patients.⁸ OAC treatment became more convenient with the introduction of the direct oral anticoagulants (DOACs) in the 2010s, which do not need regular monitoring of their anticoagulant effect, have no interactions with food, and fewer drug–drug interactions. However, more importantly, DOACs are at least as effective as warfarin for stroke prevention and have an overall lower bleeding risk, particularly as to intracranial haemorrhage, and are now the first-line treatment option to prevent stroke in AF patients, as the authors point out in their review.^{1,9}

At the same time, appropriate stroke and bleeding risk stratification has been formalised, not least due to the user-friendly and low-cost CHA₂DS₂-VASc and HAS-BLED scores, and is now an integrated part of stroke prevention in AF patients.¹ Importantly, stroke and bleeding risk are not static and need regular re-assessment during the course of AF, as well as appropriate dosing of OACs to mitigate possible treatment complications, as the authors underline.

Gupta and colleagues provide an overview and appraisal of the current treatment options for rate and rhythm management of AF patients for control of symptoms, which often lead to significantly impaired QoL, as the authors point out.⁷ On the basis of the results of the Atrial Fibrillation Follow-up Investigation of Rhythm Management (AFFIRM) and Atrial Fibrillation and Congestive Heart Failure (AF–CHF) trials,^{10,11} which showed no prognostic benefit of rhythm control, pharmacological rate control was the main treatment strategy for many years. The authors underline, that rate control may be sufficient to improve symptoms in many

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*Corresponding author. Department of Cardiology, Esbjerg Hospital – University Hospital of Southern Denmark, Finsensgade 35, 6700 Esbjerg, Denmark.

E-mail address: Axel.Brandes2@rsyd.dk (A. Brandes).

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patients, but a certain proportion of patients will need rhythm control treatment, because they remain symptomatic despite optimal rate control.

While antiarrhythmic drugs (AADs) initially were the preferred option for rhythm control, catheter ablation has emerged as a cornerstone during the last 10–15 years due to technical and procedural advances and shows better long-term results in terms of AF recurrences and QoL. As the authors also point out, catheter ablation is increasingly used earlier in rhythm control management than previously. Moreover, there is growing evidence that certain patient populations, e.g., patients with newly detected AF, those with paroxysmal AF, and some patients with heart failure, may benefit from rhythm control as first-line treatment, including catheter ablation, with regard to both symptom control and improved outcomes, i.e., mortality and stroke rate. Nevertheless, the evidence base remains incomplete at this time, as the authors underline.

The two papers delineate the marked progress that has been made in the management of AF patients, with development of new and improvement of already known treatments during the past two decades. Stroke prevention has become easier and safer with the advent of DOACs, which cause less bleeding than warfarin. Left atrial appendage occlusion (LAAO) or exclusion has become available as an additional treatment option for patients with contraindications to OACs, serious bleeding events with OAC treatment, or intolerable side effects. Ongoing and future studies will demonstrate, whether LAAO has the potential to become a treatment option for the broader AF population. A new class of OACs, the factor XI inhibitors, have recently appeared on the horizon and are currently tested in phase II and III trials. These studies, which are ongoing or in the planning stages, will provide definitive evidence whether these new drugs have superior efficacy and safety compared to current treatment options for stroke prevention.

In contrast to pharmacological rhythm control, where only few new AADs, including dronedarone and vernakalant, entered the market, the last two decades saw a rapid development of catheter ablation of AF, which has become safer and more successful and is now offered to more and more patients also at earlier stages of the disease.

Nevertheless, AF management still encounters many challenges, and there are still unanswered questions. Not all treatments are equally effective in all patients, and some patients may not even be suitable for certain treatment options. Therefore, there is a need for more individualised treatment from the beginning, which also requires better characterisation of the patients and more patient involvement in treatment decision making. This individualised management approach also requires credible patient information and education of both patients and healthcare professionals.

Rhythm control appears to be more effective in earlier stages of AF, when the underlying substrate is not yet that pronounced. This raises the question whether we should be more proactive in detecting AF earlier to initiate timely treatment to reduce stroke in patients at risk, control rhythm, and treat underlying cardiovascular risk factors and conditions to slow progression of the underlying substrate and thereby AF.

Although concepts for holistic, integrated AF care have been developed,¹ their implementation in daily practice is still challenging owing to the current fragmentation of AF care within the healthcare sectors, but also between them.

In conclusion, there is still room for improvement of AF care. Many of the unanswered questions should be addressed by properly designed and conducted clinical trials, to improve AF care in the years to come.

Contributors

Both authors contributed equally.

Declaration of interests

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