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Scientific editorial

A clinician viewpoint on the 2024 European guidelines on the management of patients with atrial fibrillation



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1. Abbreviations

ACC	American College of Cardiology
AF	atrial fibrillation
AHA	American Heart Association
ARTESiA	Apixaban for the Reduction of Thrombo-Embolism in Patients With Device-Detected Sub-Clinical Atrial Fibrillation
CHA ₂ DS ₂ -VA	Congestive heart failure, Hypertension, Age ≥ 75 years, Diabetes mellitus, Stroke, Vascular disease, Age 65–74 years
CHA ₂ DS ₂ -VASc	Congestive heart failure, Hypertension, Age ≥ 75 years, Diabetes mellitus, Stroke, Vascular disease, Age 65–74 years, Sex category female
CPAP	continuous positive airway pressure
DOAC	direct oral anticoagulant
EHRA	European Heart Rhythm Association
ESC	European Society of Cardiology

LA	left atrial
LoE	level of evidence
NOAH-AFNET 6	Non-Vitamin K Antagonist Oral Anticoagulants in Patients with Atrial High Rate Episodes
OAC	oral anticoagulation

2. Background

Unlike other cardiovascular conditions, atrial fibrillation (AF) may be detected and managed by a large number of specialties (possibly non-cardiologists) or in primary care. The 2024 European Society of Cardiology (ESC) guidelines for the management of AF [1] were recently published and were intended to be easy to read and implemented by cardiologists and a wide range of other health-care givers, with the aim of improving the prognosis and well-being of patients with AF. Among almost 60 new recommendations, 17 (29%) are only supported with level of evidence (LoE) C and some of them are unlikely to markedly change the management of patients with AF in daily practice (e.g. the Class I LoE C recommendation that a transthoracic echocardiography is needed in patients with AF). Some others are, in contrast, significant changes in comparison to the 2020 guidelines [2] and may deserve some comments for clinicians.

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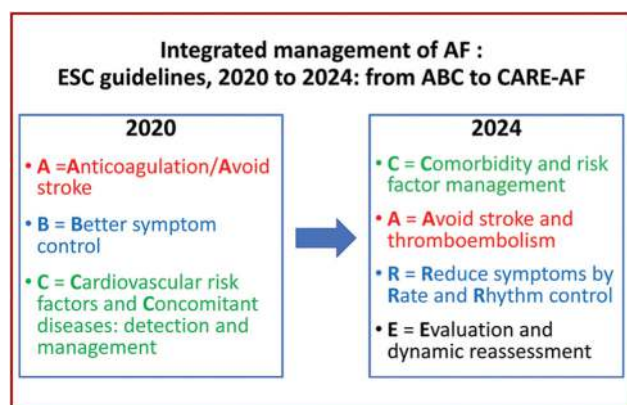


Fig. 1. Integrated management of patients with AF [1,2]. AF: atrial fibrillation; ESC: European Society of Cardiology.

3. Integrated care for patients with AF

In the 2010s, the World Health Organization advocated integrated care models for chronic conditions considering a high division of healthcare services [3]. A structured, multidisciplinary and patient-centred approach for the management of patients with AF is likely to improve prognosis and patient well-being. Moreover, guideline adherence in the management of patients with AF has been demonstrated to improve patient outcomes compared with non-adherence to guidelines [4].

The 2020 ESC AF guidelines initiated this recommendation with the ABC pathway ('A' for Anticoagulation and Avoid stroke, 'B' for Better symptom management, and 'C' for Cardiovascular and Comorbidity optimization [2]. Despite the amount of evidence supporting the ABC pathway [5–9], the 2024 ESC AF guidelines recommended a new AF-CARE acronym, basically highlighting the same AF care items as the ABC pathway but organized in a different order. This change in recommendation, from ABC to AF-CARE, was mainly justified by the fear that the 'C' domain (Cardiovascular and Comorbidity management) could be neglected (Fig. 1) [1,2].

Useful and pragmatic targets with Class I recommendations are suggested for main comorbidities and risk factors: blood pressure < 130/80 mmHg (in line with the 2024 ESC hypertension guidelines [10]), optimal medical therapy for heart failure, weight loss of 10% in patients with overweight or obesity, effective glycaemic control (possibly including recent medications) and alcohol consumption ≤ 3 drinks per week. By comparison, management of obstructive sleep apnoea only has a Class IIb recommendation, since randomized trials on continuous positive airway pressure (CPAP) and AF were small, had diverging results and data on the cardiovascular mortality benefit of CPAP therapy in obstructive sleep apnoea remains inconclusive [11].

Whether these changes will enable a successful management of the 'C' item of AF care, or rather confuse practitioners and medical students familiar with the ABC pathway in recent years remains to be seen in practice. It may seem common sense that all cardiovascular risk factors and associated conditions need to be actively managed in any cardiovascular condition. Therefore, the highlighted 'C' is not specific for AF and may generally apply to many guidelines [12], while other simple educational messages are more specific to AF when it comes to stroke prevention and rhythm management.

4. Prevention of stroke and systemic embolism

All recent international guidelines recommended the CHA₂DS₂-VAsc score (Congestive heart failure, Hypertension, Age ≥ 75 years,

Diabetes mellitus, Stroke, Vascular disease, Age 65–74 years, Sex category female) in patients with AF for estimating the risk of stroke, since it is the most widely used tool in the modern era to identify, in a reliable manner, a sufficiently low risk of stroke to recommend that long-term oral anticoagulation (OAC) is not appropriate [2,13].

The 2024 ESC AF guidelines instead propose using the simplified CHA₂DS₂-VA score (Congestive heart failure, Hypertension, Age ≥ 75 years, Diabetes mellitus, Stroke, Vascular disease, Age 65–74 years) for the assessment of stroke risk (LoEC), considering that the female sex item may complexify practice for healthcare professionals and omits persons identifying as nonbinary, transgender or some of those receiving sex hormone therapy. Indeed, female sex is a stroke risk modifier rather than a stroke risk factor per se [14]. Still, the evidence supporting use of the CHA₂DS₂-VA score remains scarce. Fortunately, some recent European data indicate that the CHA₂DS₂-VA score may perform as well as the CHA₂DS₂-VAsc score and could potentially simplify stroke risk assessment in patients with AF [15]. However, although the sex category item did not per se result in an indication for OAC use, the CHA₂DS₂-VAsc score was probably useful for drawing attention to the risk of stroke in female patients and likely to an increased use of OAC in women [16].

A practical and well-designed section on the use of direct oral anticoagulants (DOACs) is included, summarizing the main aspects of the previous European Heart Rhythm Association (EHRA) practical guide on the use of DOACs [17], which was more comprehensive but is somewhat outdated now.

The evidence regarding prevention of ischaemic stroke using transcatheter left atrial appendage closure in patients with AF did not markedly evolve for years. It was initially proposed for patients with AF with a significant risk of stroke and a contraindication to long-term use of OAC (Class IIb, LoE B) in the 2012, 2016 and 2020 ESC AF guidelines [2,4,18]. In the 2024 version of the ESC AF guidelines, the LoE is downgraded to C, with the fair justification that the existing evidence does not really apply to patients with contraindications to OACs in the modern era. This may, however, evolve again in the next guidelines with the recent results of the OPTION study, where left atrial appendage closure showed superiority over OACs for reducing bleeding events and non-inferiority for preventing mortality, stroke and embolism in patients at significant risk of stroke who previously underwent AF ablation [19].

5. Rhythm and rate control

Based on the results of the randomized EAST trial [20], the 2024 ESC AF guidelines recommend a rhythm control strategy within 12 months after diagnosis in selected patients with AF with a significant risk of thromboembolism and cardiovascular complications, in order to reduce the risk of cardiovascular mortality or hospitalization (Class IIa, LoE B). However, the selection of patients for such a strategy may still be an issue in daily clinical practice. The ESC guidelines do not clearly mention a strategy similar to that proposed in the 2023 American College of Cardiology (ACC)/American Heart Association (AHA) AF guidelines [13] with relevant goals for rhythm control therapy, including:

- evaluation of how AF may contribute to a reduced left ventricular function in patients with persistent AF;
- improvement of symptoms in patients with symptomatic AF;
- risk reduction for hospitalization, stroke and mortality in patients with AF;
- improvement of symptoms and outcomes in the specific subgroup of patients with AF and heart failure;
- reduction in the risk of AF progression.

The recommendation of catheter ablation for rhythm control as a first-line therapy in patients with paroxysmal AF has been upgraded from a Class IIa, LoE B to a Class I, LoE A in the 2024 ESC AF guidelines. For patients with AF and heart failure, the recommendations regarding AF ablation to improve cardiovascular outcomes—in addition to symptoms, quality of life and ventricular function—remain Class I, LoE A, without mentioning whether this should be a first- or second-line approach. It is our opinion that catheter ablation in patients with AF and heart failure should not be ignored or markedly delayed since these patients are those who may have a high clinical benefit with the procedure [21]. The 2024 ESC AF guidelines provide a new recommendation on the usefulness of repeated AF ablation (Class IIa, LoE B), but do not mention any recommendation for AF ablation in asymptomatic patients with AF. Pulmonary vein isolation remains the basis of AF catheter ablation, but the optimal ablation strategy is not yet clearly established for patients with non-paroxysmal AF. There is also no specific recommendation on technical aspects of the procedure regarding energy (radiofrequency, cryoablation or pulsed field ablation) or sites of ablation beyond pulmonary veins, considering the lack of robust evidence with any of them for a relevant benefit on hard clinical endpoints, some of these aspects being covered in a recent worldwide scientific document by heart rhythm working groups [22].

It should also be mentioned that active restoration of sinus rhythm may be linked to anatomic and/or four cardiac chambers functional reverse remodelling. Restoration of sinus rhythm should be vigorously attempted to improve cavity reverse remodelling and severity of Carpentier type I functional atrioventricular regurgitations in AF [23]. Improving the ability to predict recurrence post-ablation through the use of multimodality imaging (cardiac dilatation, heart dysfunction, fibrosis, etc.) and circulating biomarkers (N-terminal pro-B-type natriuretic peptide, troponins, growth factors, interleukin-6, etc.) remains challenging [24]. Atrial functional mitral and/or tricuspid regurgitations are described in both AF and heart failure with preserved ejection fraction inducing left atrial (LA) remodelling, and characterized by an annular dilation, with leaflet malcoaptation and insufficient leaflet remodelling [25,26]. The impact of early rhythm restoration strategies and mitral annular interventions (transcatheter versus surgery) to treat atrial functional atrioventricular regurgitations are under active investigation.

6. Other considerations

6.1. Evaluation and reassessment

Evaluation and reassessment should be personalized for each patient, with a dynamic strategy that accounts for how AF and the associated conditions evolve over time. Some interesting examples of relevant changes that may occur during follow-up are: worsening CHA₂DS₂-VA score over time, reviewing modifiable and non-modifiable risk factors to mitigate bleeding risk, worsening renal function to be monitored in the context of DOAC use, re-evaluation of symptoms before and after treatment with rate or rhythm control, heart rate control that may be improved when there is worsening HF, etc.

6.2. Atrial cardiomyopathy

The 2024 guidelines only briefly mention the concept of atrial cardiomyopathy defined as ‘any complex of structural, architectural, contractile, or electrophysiological changes affecting the atria with the potential to produce clinically relevant manifestations’, which has been more extensively covered in a recent worldwide

scientific document [27]. An inverse effect between the extent of LA wall fibrosis measured by delayed-enhancement magnetic resonance imaging and LA strain and strain rate in speckle-tracking echocardiography has been reported in AF [28]. Transthoracic echocardiography should systematically include measurement of the LA volume and, whenever possible, the global strain of the left atrium and its three components (reservoir, conduit, contraction). These parameters are complementary and characterize atrial dysfunction described in atrial cardiomyopathy [29]. LA longitudinal reservoir strain may identify patients at higher risk for atrial thrombogenesis. LA volumes and impaired LA strain are important correlates of sub-clinical atrial arrhythmias, even after adjustment for conventional measures of LA structure and function [30]. LA reservoir strain may also independently predict the risk of incident ischaemic stroke [31].

6.3. Subclinical AF

Optimal management of patients with so-called ‘subclinical’ AF remains debatable. In patients with subclinical AF of short duration, two randomized trials (NOAH-AFNET 6 [Non-Vitamin K Antagonist Oral Anticoagulants in Patients With Atrial High Rate Episodes] and ARTESiA [Apixaban for the Reduction of Thrombo-Embolism in Patients With Device-Detected Sub-Clinical Atrial Fibrillation]) found a marginal absolute reduction in ischaemic stroke risk, but an increased risk of major bleeding with DOAC versus control (aspirin in ARTESiA and placebo in NOAH-AFNET 6) [32–34]. The 2024 ESC AF guidelines thus delivered a cautious Class IIb, LoE B recommendation for a DOAC in patients with subclinical AF, excluding those at high risk of bleeding. Questions remain on the optimal stratification of thromboembolic risk and how to individualize the strategy for anticoagulation in these patients, since some secondary analyses based on CHA₂DS₂-VASc score or AF duration reported somewhat counterintuitive results.

7. Conclusions

Facilitating guideline implementation for routine clinical practice in guideline documents should theoretically introduce new evidence-based recommendations and avoid arbitrary changes, which may confuse practitioners. Whether the new recommendations and updates in the 2024 AF guidelines will result in higher adherence and improved prognosis of patients with AF will need to be evaluated in future years. The most noticeable aspect of the 2024 ESC guidelines for the management of patients with AF is the emphasis on management of concomitant comorbidities and risk factors, with a switch from the ABC to the AF-CARE acronym. It is logical (and not disruptive) that all cardiovascular risk factors and comorbidities should be – as much as possible – considered, adequately managed and regularly reviewed in every patient with heart disease. However, such acronyms are certainly useful for a holistic approach of the quite complex clinical management in patients with AF, who are commonly elderly individuals with various comorbid conditions.

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