



Left Atrial Appendage Occlusion, Shared Decision-Making, and Comprehensive Atrial Fibrillation Management

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KEYWORDS

• Left atrial appendage occlusion • Shared decision-making • Atrial fibrillation

KEY POINTS

- The epidemic of atrial fibrillation (AF) requires a comprehensive management strategy that uses the full force of available data and technology, including anticoagulation, ablative therapy, and left atrial appendage occlusion.
- Patient-centered care with an emphasis on shared decision-making is particularly relevant to the authors' understanding of the complexity of AF and has helped them tailor therapy in this ever-growing patient population.

INTRODUCTION

Case Example

A 70-year-old woman with hypertension and diabetes fell while walking her dog 6 months ago and suffered a moderate traumatic subdural hematoma. Surgical evacuation was successful, and the patient has since returned to normal activity. Two months ago she developed intermittent palpitations, and an event recorder detected paroxysms of atrial fibrillation (AF). She was treated with beta blockade and a class Ic agent. She is now referred to discuss stroke risk-reduction options.

AF has become a worldwide epidemic.¹ The complexities of AF management have grown with the prevalence of the condition, driven by growing understanding of AF pathophysiology and morbidity and improved treatment options, including new oral anticoagulants, catheter

ablation, and left atrial appendage occlusion (LAAO). In this article, the authors discuss the roles of anticoagulation and LAAO in comprehensive AF management in the context of patient-centered care and shared decision-making (SDM).

THE BALANCE BETWEEN STROKE AND BLEEDING RISK IN ATRIAL FIBRILLATION

The risk of stroke and systemic embolism is increased in AF by approximately 5-fold.^{1,2} Based on population studies and stroke registries, AF is implicated in up to 33% of cases.^{3,4} Cardio-embolism from the left atrial appendage (LAA) is the likely source, and these events tend to be more disabling because of the potential for a large clot burden.⁵ Anticoagulation by vitamin K antagonism reduces the risk of stroke.

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More recently, direct oral anticoagulants (DOACs), including a direct thrombin inhibitor and 3 factor Xa inhibitors, have also been approved in patients with nonvalvular AF.⁶⁻⁹

Stroke Risk in Atrial Fibrillation

Treatment with a vitamin K antagonists (VKAs) or DOACs in AF is based on the estimated stroke risk. Risk stratification schemes help guide a decision to anticoagulate. The most widely used are the CHADS₂ (congestive heart failure, hypertension, age, diabetes, stroke or transient ischemic attack) and, more recently, CHA₂DS₂-VASc scores. In the CHADS₂ score, congestive heart failure (1 point), hypertension (1 point), age greater than 75 years (1 point), diabetes (1 point), and stroke or transient ischemic attack (TIA) (2 points) are taken

into account. A score of 2 or greater is an indication for anticoagulation with warfarin. The CHA₂DS₂-VASc score adds moderate risk factors like age greater than 65 years (1 point), female sex (1 point), and vascular disease or previous myocardial infarction (MI) (1 point) and gives an additional point for age greater than 75 years (2 points). Similarly, a score of 2 or greater is an indication for anticoagulation (Fig. 1).

The risk of stroke using these scores has been validated and generally increases with the accumulation of risk factors.^{10,11} For example, a CHADS₂ score of 1 gives an annual stroke risk of 3.4%, whereas a score of 4 gives about an 8.9% annual stroke risk. The initial validation cohort for the CHADS₂ score showed a high correlation with stroke risk.¹⁰ However, its

Risk Factors	SCORE
Congestive heart failure	1
Hypertension	1
Age 75 or greater	2
Age 65-74	1
Diabetes Mellitus	1
Stroke/TIA/systemic embolism	2
Vascular disease	1
Sex (female)	1
Your score	



CHA ₂ DS ₂ -VASc Score	ADJUSTED STROKE RATE (% per year)
0	0% or very low
1	1.3%
2	2.2%
3	3.2%
4	4.0%
5	6.7%
6	9.8%
7	9.6%
8	6.7%
9	15.2%

Fig. 1. CHA₂DS₂-VASc and HAS-BLED stroke and bleeding risk scores and associated annual risk of stroke or bleeding events. CHA₂DS₂-VASc stroke risk score. (Adapted from Pisters R, Lane DA, Nieuwlaat R, et al. A novel user-friendly score [HAS-BLED] to assess 1-year risk of major bleeding in patients with atrial fibrillation: the Euro Heart Survey. Chest 2010;138:1096; with permission.)

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