## Anticoagulation in Older Adults with Multimorbidity



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#### **KEYWORDS**

- Multimorbidity 
  Atrial fibrillation 
  Anticoagulation 
  Warfarin
- New oral anticoagulants Polypharmacy Bleeding risk

#### **KEY POINTS**

- Multimorbidity affects most older adults with atrial fibrillation (AF) and increases the risk of AF-associated ischemic stroke; most older AF patients will derive net benefit from anticoagulation.
- The newer target-specific oral anticoagulants have become viable alternatives to warfarin.
- Physicians must weigh the benefit of stroke prevention against the risks and burdens of anticoagulation, which increase with age and comorbidities.
- In selecting among available anticoagulant agents, physicians should consider a patient's coexisting medical conditions, medications, adherence, cost, ability to participate in monitoring, and preferences.

#### INTRODUCTION

Older individuals are at greatly increased risk of atrial fibrillation (AF) and AF-associated ischemic stroke. Although anticoagulant therapy can diminish stroke risk, the risks and burdens of therapy, combined with older patients' concomitant physical and medical problems, must be weighed when considering prescription of anticoagulants. Multimorbidity, or the coexistence of 2 or more chronic conditions, complicates the anticoagulation decision and the universal application of evidence-based guidelines to complex older patients with AF. This article reviews the appropriate use and challenges of anticoagulation in multimorbid patients with AF.

#### MULTIMORBIDITY AND ATRIAL FIBRILLATION

AF is the most common clinically significant cardiac arrhythmia, and the burden of disease falls disproportionately on older adults.<sup>1</sup> In the United States, the prevalence of

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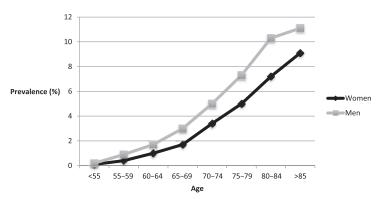
AF increases from 0.1% among those younger than age 55 to 9.0% among those 80 or older. AF prevalence is projected to increase alongside the aging of the US population; by 2050, an estimated 5.6 million adults will have AF, and more than 50% of these patients will be aged 80 or older (**Fig. 1**).<sup>1</sup> A more recent study projected an even greater disease burden, with a projected prevalence in 2050 of 7.56 million.<sup>2</sup>

The aging of the US population increases the likelihood not only of specific conditions like AF, but also of multimorbidity. More than two-thirds of Medicare beneficiaries—equivalent to 21.4 million adults—have 2 or more chronic diseases. The median number of conditions is 6 and AF is the 11th most common among these.<sup>3</sup> Accordingly, AF coexists frequently with other comorbidities, including hypertension, ischemic heart disease, and heart failure (Fig. 2). One-third of AF patients have concomitant chronic kidney disease, which has important implications for treatment, not only because of its association with increased risk of stroke and hemorrhage, but also because many new anticoagulants are at least partially cleared renally. Comorbidities like cataracts and arthritis are common among elderly AF patients and can greatly impact the logistics of anticoagulation. Multimorbidity, therefore, affects the majority of AF patients and should be a central consideration in its management.

In AF patients, multimorbidity is associated with increased stroke risk and worse outcomes after stroke.<sup>4</sup> An estimated 36% of strokes in patients 80 to 89 years old in the United States are due to AF<sup>5</sup> and a large percentage of patients who suffer cryptogenic strokes (strokes without a clear underlying cause) are later found to have AF on cardiac monitoring.<sup>5</sup> Multimorbid patients have a 37% increased risk of poor functional outcomes after ischemic stroke<sup>6</sup> and AF-associated strokes are associated with longer duration of stay, higher rates of disability, and increased mortality.<sup>7</sup> Multimorbidity is associated with a 2.5-fold increase in 30-day and 5-year mortality for patients with ischemic stroke. Thus, stroke prevention is a cornerstone of decreasing the morbidity and mortality associated with AF.

### STROKE PREVENTION IN MULTIMORBID ADULTS WITH ATRIAL FIBRILLATION Assessing Stroke Risk

Multimorbid older adults virtually always exceed the thresholds for stroke risk that warrant anticoagulation as established by current risk schemes. Stroke prediction scores, such as the CHADS<sub>2</sub> and CHA<sub>2</sub>DS<sub>2</sub>-VASc scores,<sup>8,9</sup> have been incorporated



**Fig. 1.** Prevalence of diagnosed atrial fibrillation by age. (*Data from* Go AS, Hylek EM, Phillips KA, et al. Prevalence of diagnosed atrial fibrillation in adults: national implications for rhythm management and stroke prevention: the anticoagulation and risk factors in atrial fibrillation (ATRIA) study. JAMA 2001;285(18):2370–5.)

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