Editor's Note

Comparing Non–Vitamin K Oral Anticoagulants
Where We Are Now

Anna L. Parks, MD; Rita F. Redberg, MD, MSc

In 2016, we have a bevy of oral anticoagulants that are approved for stroke prevention in patients with atrial fibrillation. Non-vitamin K oral anticoagulants (NOACs) are increasingly prescribed, and some guidelines recommend their use over vitamin K antagonists.[1] As a consequence, clinicians and patients have more choices and need more data to best balance risks and benefits for each individual.

Related article page 1662

A study by Graham and colleagues[2] from the US Federal Drug Administration in this issue of *JAMA Internal Medicine* offers valuable information for those choosing between NOACs. This retrospective cohort study analyzed data from 118 891 Medicare enrollees with nonvalvular atrial fibrillation who had initiated treatment with either dabigatran or rivaroxaban. They showed that patients taking rivaroxaban and dabigatran had equivalent reductions in thromboembolic stroke risk. In contrast, rivaroxaban was associated with a statistically significant increase in bleeding, with more intracranial and major extracranial bleeding, including major gastrointestinal bleeding.

As the investigators note, there are no randomized clinical trials comparing NOACs, and the few indirect comparisons derived from clinical trial data have significant limitations. This study offers real-world data adding a large number of the multimorbid, older patients that constitute the rising tide of the atrial fibrillation population. The additional information should lead us to prescribe dabigatran over rivaroxaban for patients with atrial fibrillation. Also, it can help inform further investigation of NOAC monitoring and tailored dosing, as others have previously recommended for dabigatran.[3] In addition, knowing that a patient prescribed rivaroxaban is at comparatively increased risk of bleeding might encourage clinicians to more vigilantly identify and mitigate modifiable risk factors. Finally, it offers important guidance to consumers on relative efficacy and safety profiles that drive NOAC selection, particularly for those at greatest risk of hemorrhage.

This study represents a milestone in the next phase of NOAC research and highlights the need for more comparative effectiveness studies in this area. The current regulatory environment adds alternative anticoagulant drugs to the market without data comparing them with the current alternatives. The Patient-Centered Outcomes Research Institute can play a key role in filling in these needed data. Our choices for anticoagulation must be informed by knowledge of which agents best balance the benefits of stroke prevention with the harms of bleeding for each patient.

Conflict of Interest Disclosures: None reported.

1. You JJ, Singer DE, Howard PA, et al; American College of Chest Physicians. Antithrombotic therapy for atrial fibrillation: antithrombotic therapy and prevention of thrombosis, 9th ed: American College of Chest Physicians evidence-based clinical practice guidelines. *Chest*. 2012;141(2)(suppl):e531S-e575S.

2. Graham DJ, Reichman ME, Wernecke M, et al. Stroke, bleeding, and mortality risks in elderly Medicare beneficiaries treated with dabigatran or rivaroxaban for nonvalvular atrial fibrillation [published online October 3, 2016]. *JAMA Intern Med*. doi:10.1001/jamainternmed.2016.5954.

3. Reilly PA, Lehr T, Haertter S, et al; RE-LY Investigators. The effect of dabigatran plasma concentrations and patient characteristics on the frequency of ischemic stroke and major bleeding in atrial fibrillation patients: the RE-LY Trial (Randomized Evaluation of Long-Term Anticoagulation Therapy). *J Am Coll Cardiol*. 2014;63(4):321-328.