Preventing Stroke in Patients with Atrial Fibrillation

Patients with atrial fibrillation have a higher risk for stroke than the general population, and that risk increases markedly with age. Anticoagulation therapy lowers the risk of stroke and improves all-cause mortality. Warfarin has been the mainstay of anticoagulation therapy for decades but has an increased risk of major bleeding and requires a complicated administration regimen.

A recent update of research adds to the evidence about the relative benefits and harms of newer anticoagulation therapies and tools to predict stroke related to atrial fibrillation and bleeding risk. This evidence on the newer therapies, along with recently updated guidelines on managing nonvalvular atrial fibrillation, can help inform clinician and patient decisions on anticoagulant use and may potentially reduce the risk of stroke and its consequences.

### Comparison of DOACs with Warfarin

<table>
<thead>
<tr>
<th>Anticoagulant</th>
<th>Risk of stroke or embolism</th>
<th>Risk of major bleeding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apixaban (Eliquis®)</td>
<td>Lower than warfarin</td>
<td>Lower than warfarin</td>
</tr>
<tr>
<td>Dabigatran (Pradaxa®) i</td>
<td>Lower than warfarin</td>
<td>Same as warfarin</td>
</tr>
<tr>
<td>Edoxaban (Savaysa®, Lixiana®)</td>
<td>Same as warfarin</td>
<td>Lower than warfarin</td>
</tr>
<tr>
<td>Rivaroxaban (Xarelto®)</td>
<td>Same as warfarin</td>
<td>Similar or possibly higher than warfarin*</td>
</tr>
</tbody>
</table>

*150-mg dose

**NOTE:** Inconsistencies between randomized controlled trial and observational data indicate the risk of major bleeding may be higher among those taking rivaroxaban than those taking warfarin.

**Findings**

A 2018 systematic review update supported by the Patient-Centered Outcomes Research Institute (PCORI) through a research partnership with the Agency for Healthcare Research and Quality (AHRQ) found new evidence suggesting that direct oral anticoagulants (DOACs) are as or more effective than warfarin in preventing strokes related to atrial fibrillation, with similar or lower risks of major bleeding. The update also found that clinical tools such as the CHADS<sub>2</sub>, CHA<sub>2</sub>DS<sub>2</sub>-VASc and HAS-BLED can assist clinicians in predicting risk of stroke and bleeding and help guide management of atrial fibrillation.

**Risk Assessment**

- The CHADS<sub>2</sub> and CHA<sub>2</sub>DS<sub>2</sub>-VASc tools demonstrated comparable prediction ability.
- The HAS-BLED risk score tool was better able to predict major bleeding events than other tools.
What Do Current Guidelines Say?
The American College of Cardiology (ACC), American Heart Association (AHA), the Heart Rhythm Society (HRS), and the American Academy of Family Physicians (AAFP) publish guidelines on assessing risks of stroke and bleeding associated with anticoagulant therapy. These guidelines are designed to help patients and physicians make informed decisions about anticoagulant therapy.

Table 1. Summary of Practice Guidelines

<table>
<thead>
<tr>
<th>Source</th>
<th>Assessing stroke risk</th>
<th>Assessing bleeding risk</th>
<th>Anticoagulant use</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACC, AHA, HRS (updated 2019)</td>
<td>Use CHA2DS2-VASc score.</td>
<td>HAS-BLED score can be used to determine bleeding risk in patients considering anticoagulants.</td>
<td>For women with a CHA2DS2-VASc score of 2 or greater and men with a score of 3 or greater, treat nonvalvular atrial fibrillation or atrial flutter with a DOAC rather than warfarin.</td>
</tr>
<tr>
<td>AAFP (updated 2017)</td>
<td>No preference for the CHA2DS2-VASc score over the CHADS2 score.</td>
<td>HAS-BLED score can be used to determine bleeding risk and is slightly better for identifying the risk in patients taking warfarin.</td>
<td>Chronic anticoagulation is recommended for patients who have atrial fibrillation unless they are at low risk of stroke (CHADS2&lt;2) or have specific contraindications. Choice of anticoagulation therapy should be based on patient preferences and patient history.</td>
</tr>
</tbody>
</table>

Talking with Patients about Anticoagulants
A consumer-friendly version of this update is available at www.pcori.org/new-evidence-stroke-affib-patients to help support clinicians’ conversations with patients and caregivers about anticoagulant use and the trade-offs in choosing a medication. Topics for discussion include:

- The benefits and risks of anticoagulant use
- The patient’s risk assessment tool scores and what they mean when balancing the risk of stroke from atrial fibrillation with the risk of bleeding associated with anticoagulant use
- The fact that anticoagulants do not treat atrial fibrillation so patients should not expect the anticoagulants to improve their atrial fibrillation
- The importance of talking to a clinician before patients stop taking the medication
- Weighing other factors that may influence a patient’s decision to use a DOAC or warfarin, such as:
  - Age and other factors that may affect risk of stroke or bleeding related to atrial fibrillation
  - The need for regular lab testing while taking warfarin to monitor the blood’s ability to clot
  - The lack of widespread availability and guidelines for use of DOAC reversal agents
  - Insurance coverage and out-of-pocket costs
  - The importance of taking medication at the same time every day and monitoring for food, alcohol, and drug interactions

View the full systematic review update at www.pcori.org/reviews-AFIB