Overview

Step 1: Determine your patient’s risk of stroke using CHADS2 Score2-4

- **CHADS2 Score**
  - **1**
    - Age < 75 years
    - Hypertension
    - Diabetes
    - Previous stroke or TIA
    - Congestive heart failure
  - **2**
    - Age ≥ 75 years
    - Hypertension
    - Diabetes
    - Previous stroke or TIA
    - Congestive heart failure
  - **3**
    - Age ≥ 75 years
    - Hypertension
    - Diabetes
    - Previous stroke or TIA
  - **4**
    - Any two of the above risk factors

Step 2: Determine your patient’s risk of bleeding using the HAS-BLED Score

- **HAS-BLED Score**

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypertension</td>
<td>1</td>
</tr>
<tr>
<td>Alcohol use</td>
<td>1</td>
</tr>
<tr>
<td>Smoking</td>
<td>1</td>
</tr>
<tr>
<td>Congestive heart failure</td>
<td>1</td>
</tr>
<tr>
<td>Liver disease</td>
<td>1</td>
</tr>
<tr>
<td>Elderly age</td>
<td>1</td>
</tr>
<tr>
<td>Bleeding history</td>
<td>1</td>
</tr>
</tbody>
</table>

Step 3: Balance the benefit and risk with available agents

**Commons**

- **Agent**
  - **Warfarin**
    - **Dose**
      - Standard (oral) dose of 3 mg to 5 mg daily
      - **Monitoring**
        - INR (International Normalized Ratio)
  - **Novel Oral Anticoagulants**
    - **Dabigatran**
      - **Dose**
        - 110 mg bid
      - **Monitoring**
        - PT (Prothrombin Time)
    - **Rivaroxaban**
      - **Dose**
        - 20 mg once daily
      - **Monitoring**
        - Anti-Xa levels
    - **Apixaban**
      - **Dose**
        - 5 mg bid
      - **Monitoring**
        - Anti-Xa levels

Step 4: Select, implement & monitor stroke prophylaxis

**Agent Dose**

<table>
<thead>
<tr>
<th>Agent</th>
<th>Dose</th>
<th>Monitoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Warfarin</td>
<td>3-5 mg daily</td>
<td>INR</td>
</tr>
<tr>
<td>Dabigatran</td>
<td>110 mg bid</td>
<td>PT</td>
</tr>
<tr>
<td>Rivaroxaban</td>
<td>20 mg once daily</td>
<td>Anti-Xa levels</td>
</tr>
<tr>
<td>Apixaban</td>
<td>5 mg bid</td>
<td>Anti-Xa levels</td>
</tr>
</tbody>
</table>

**Monitoring**

- **INR**
  - Target range: 2-3
- **PT**
  - Target range: 30-40 sec
- **Anti-Xa levels**
  - Target range: 1.5-2.5 IU/mL

**Comments**

- **Warfarin**
  - **Monitoring**
    - INR
  - **Adverse effects**
    - Bleeding
    - Liver disease
  - **Contraindications**
    - Active bleeding
    - History of bleeding

- **Novel Oral Anticoagulants**
  - **Monitoring**
    - PT/INR
  - **Adverse effects**
    - Bleeding
  - **Contraindications**
    - Active bleeding
    - History of bleeding

For a complete list of References, go to www.cccp.ca
Patients with a CHADS2 score of 0 could still be at increased risk of stroke and require further risk stratification based on the following characteristics:2,4,5

- Known vascular disease
- Diabetes
- Age > 75 years
- Congestive Heart Failure

Determine your patient’s risk of stroke

† Including other cardioembolic events such as systemic or pulmonary thromboembolism.

Perioperative prophylaxis (Canadian Cardiovascular Society 2014 Guidelines):4

<table>
<thead>
<tr>
<th>CHADS2 Score</th>
<th>Stroke Rate per 100</th>
<th>OAC</th>
<th>4.0 (3.1 – 5.1) OAC</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>8.5 (6.3 – 11.1)</td>
<td>OAC</td>
<td>5</td>
</tr>
<tr>
<td>1</td>
<td>1.3%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>6.5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>12.5%/yr</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

While certain patient populations may require dual antiplatelet therapy (e.g., ASA + clopidogrel) when an ischemic etiology is strongly suspected, the risk of bleeding dramatically increases, with a major bleed defined as a reduction in the hemoglobin of ≥1g/dL or any bleed that was intracranial, intraspinal, intraocular, retroperitoneal, or leading to a decrease in the hemoglobin of ≥2g/dL.7

Risk factors for stroke are also risk factors for bleeding, and many risk factors for bleeding are also risk factors for stroke. Importantly, many factors for both are risk factors for stroke, and sequela from sequela severity are generally worse than sequela from stroke. Furthermore, a number of bleeding risk factors are potentially reversible (e.g., DP therapy, concurrent NSAIDS, alcohol abuse, etc.) and should be addressed to decrease bleeding risk.

The incidence of major bleeding with a HAS-BLED score 6 (tested in a cohort of European patients with AF prescribed warfarin or ASA). Importantly, many risk factors for bleeding are also risk factors for stroke, and patients are appropriately anticoagulated with warfarin.

<table>
<thead>
<tr>
<th>Heparin</th>
<th>Score</th>
<th>Major Bleeding Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>0.5%/yr</td>
</tr>
<tr>
<td>2</td>
<td>3</td>
<td>1.9%/yr</td>
</tr>
<tr>
<td>3</td>
<td>4</td>
<td>3.7%/yr</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td>5%/yr</td>
</tr>
<tr>
<td>5</td>
<td>6</td>
<td>12.5%/yr</td>
</tr>
</tbody>
</table>

As time in the therapeutic range falls below target, the risk of stroke/systemic embolism increases, but the risk of major bleeding decreases. Patients with atrial fibrillation (AF) who have a CHADS2 score of 1 or 2 and 2 or 3 superimposed risk factors, respectively, have a stroke/systemic embolism risk of 2.1%/yr vs 2.4%/yr; an all-cause mortality risk of 0.6%/yr vs 1.6%/yr; a major bleeding risk of 3.1%/yr vs 3.3%/yr; and a major extracranial hemorrhage risk of 20%/yr vs 22%/yr.

Stroke prophylaxis

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- Lowering the risk of stroke in patients with AF
- Lowering stroke/systemic embolism risk
- Reducing all-cause mortality
- Reducing major bleeding
- Reducing major extracranial hemorrhage

The following recommendations are based on meta-analyses. Endpoints and definitions along with trial populations from meta-analyses are available for download on our website: www.scoutsymposium.com/2024/symposium

NOTE: The table provides inter-trial comparisons. Effects are not necessarily equal across trials, and effects are not necessarily irreversible.