ATRIAL FIBRILLATION: SELECTION OF ANTITHROMBOTIC THERAPY

Step 1: Stroke Risk Assessment
A. Determine CHADS2 score: _____ points
   - CHF = 1 point
   - HTN = 1 point
   - Age ≥ 75 = 1 point
   - Diabetes = 1 point
   - Prior stroke/TIA/embolism = 2 points

B. Presence of VASc risk factors?
   - V = MI, PAD, or complex aortic plaque
   - A = Age 65-74
   - S = Female sex

C. Consider estimates of annual stroke risk: _______% annual stroke risk

<table>
<thead>
<tr>
<th>CHADS2 Score</th>
<th>Annual Stroke Risk</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0.8–3.2%</td>
<td>Magnitude depends on presence of VASc risk factors</td>
</tr>
<tr>
<td>1</td>
<td>2-2.5%</td>
<td>----</td>
</tr>
<tr>
<td>2</td>
<td>4-5%</td>
<td>----</td>
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<tr>
<td>3-6</td>
<td>5-10% or more</td>
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Step 2: Use CHADS2 score and VASc risk factors to select antithrombotic therapy:

CHADS2 Score

- 0
  - Assess VASc Risk Factors
    - No VASc risk factors
      - No Antithrombotic Rx
    - Female sex or Vascular Disease
      - Aspirin 81 mg daily

- 1
  - Oral Anticoagulation for Most
    - Age 65-74 OR, Female sex AND Vascular Disease
      - “Unsuitable” for Oral Anticoagulation
        - Patient preference
        - Adherence/follow-up issues
        - Cost
        - Does not refer to bleeding risk
      - Aspirin 81 mg daily OR clopidogrel 75 mg daily (ACCP-2012)
    - Oral Anticoagulation
      - Aspirin 81 mg daily

- ≥ 2
  - Oral Anticoagulation
Step 3: Assess Bleeding Risk:

*Assessment of bleeding risk is not used to contraindicate oral anticoagulant therapy for most patients, as the risk of stroke and systemic embolism exceeds the risk of intracranial hemorrhage in most patients. Instead, higher bleeding risk mandates more intensive followup and other interventions to reduce bleeding risk.

A. Use the HAS-BLED score to estimate the annual risk of a major bleed: ___________________ % annual bleed risk

<table>
<thead>
<tr>
<th>Letter</th>
<th>Clinical RF</th>
<th>Points</th>
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<tbody>
<tr>
<td>H</td>
<td>Systolic BP &gt; 160</td>
<td>1</td>
</tr>
<tr>
<td>A</td>
<td>“Abnormal”:</td>
<td>1</td>
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<tr>
<td></td>
<td>• Creatinine &gt; 2.26 mg/dL</td>
<td></td>
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<tr>
<td></td>
<td>• Bili &gt; 2X ULN and LFTs &gt; 3X ULN</td>
<td></td>
</tr>
<tr>
<td>S</td>
<td>Prior stroke</td>
<td>1</td>
</tr>
<tr>
<td>B</td>
<td>Prior bleeding diathesis</td>
<td>1</td>
</tr>
<tr>
<td>L</td>
<td>Labile INRs (TTR &lt; 60%)</td>
<td>1</td>
</tr>
<tr>
<td>E</td>
<td>Elderly &gt; age 65y</td>
<td>1</td>
</tr>
<tr>
<td>D</td>
<td>Drugs:</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>• ETOH abuse</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• ASA or NSAIDs</td>
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</tbody>
</table>

HAS-BLED SCORE: BLEEDING RISK IN 3 AF STUDIES

<table>
<thead>
<tr>
<th>Risk/Points</th>
<th>Annual Risk of Major Bleed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low risk: 0-1</td>
<td>2.4-2.5%</td>
</tr>
<tr>
<td>Moderate risk: 2</td>
<td>4.1-5.4%</td>
</tr>
<tr>
<td>High risk: ≥ 3</td>
<td>6.9-7.7%</td>
</tr>
</tbody>
</table>

c-statistic = 0.8

B. For patients at higher bleeding risk, consider the following interventions:

- Control systolic BP < 140 mm Hg
- Avoid concurrent aspirin/clopidogrel with oral anticoagulant therapy (regardless of bleeding risk magnitude) unless:
  - Coronary artery stent in last 12 months (or very high risk stent for longer) or high risk mechanical heart valve
  - Acute coronary syndrome in last 12 months
- Patients with stable CAD may be managed with oral anticoagulants alone. Adding aspirin to oral anticoagulants does not reduce MI/stroke in most patients but may double major bleed risk.
- Fall prevention interventions, if needed
- More frequent INRs in first 3 months, if warfarin used
- Consider use of dabigatran or rivaroxaban (unless prior GI bleed or other contraindications/cautions)
- Consider Anticoagulation Clinic management

C. Fall risk: for patients with a CHADS2 score ≥ 1, falls would have to occur more than 295 times per year before the risk of a traumatic intracranial bleed would exceed the risk of stroke

Step 4: Select Desired Oral Anticoagulant (OAC) If Indicated:

- Warfarin Preferred/Mandatory
  - Mitral stenosis (mandatory)
  - Prosthetic heart valve (mandatory)
  - eGFR < 30 ml/min (mandatory)
  - Prohibitive cost of new OAC
  - Time in therapeutic INR range > 70-75% (+) patient Preference
- Non-adherent patient but OAC not contraindicated
- Concurrent drug Rx interacting with new OACs:
  - Dabigatran
  - Azole antifungals
  - Dronedarone
  - Tacrolimus
  - Rifampin
  - Amiodarone?

- Dabigatran or Rivaroxaban Preferred
  - Most patients for whom warfarin not preferred
  - Unexplained (not due to poor adherence) INR fluctuation with time in therapeutic range < 65-70%
  - Difficult access to INR monitoring
  - Frequent interruption of OAC Rx
  - Concurrent drug Rx interacting with warfarin

- Uncertain Preference: Warfarin vs New OACs
  - Stable coronary artery disease?
    - ACCP-2012 prefers warfarin
    - CCS-2012: new OAC or warfarin
  - High GI bleed risk
    - Warfarin preferred as dabigatran and rivaroxaban increase GI bleeding?
  - “Frail elderly” – warfarin preferred?
    - Wt < 50 Kg ± eGFR = 30-49 ml/min ± age ≥ 75 ± Polypharmacy – many bleeds on new OACs occur when ≥ 1 of these present
A. Antithrombotic therapy in patients with stable or unstable coronary artery disease:

B. Dosing the new OACs: must assess renal function

<table>
<thead>
<tr>
<th>eGFR/CrCl (ml/min)</th>
<th>Dabigatran</th>
<th>Rivaroxaban</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 50</td>
<td>150 mg bid</td>
<td>20 mg qd</td>
</tr>
<tr>
<td>30-50</td>
<td>150 mg bid (?)</td>
<td>15 mg qd</td>
</tr>
<tr>
<td>15-30</td>
<td>75 mg bid*</td>
<td>AVOID</td>
</tr>
<tr>
<td>&lt; 15</td>
<td>AVOID</td>
<td>AVOID</td>
</tr>
</tbody>
</table>

*Not studied; some guidelines/experts AVOID use of this dose and do not use new OACs if CrCl < 30 ml/min

Step 5: Practical Use of New Oral Anticoagulants:

A. Switching to and from new OACs:

B. Periprocedural use of new OACs:
C. Basic management of bleeding:

**Step 6: Provide Patient Education Guide(s)**

**Step 7: Selected References**

- **Clinical Practice Guidelines**

- **Practical Use of the New Oral Anticoagulants**