Bridging the Gap: When Is Anticoagulation Needed

By Stephanie Liles, MSN, ACNP
What is anticoagulation therapy?

[Image of blood clot and anticoagulants]

Anticoagulants are a group of medications that decrease clotting.

http://tinyurl.com/phw2eyn
Why do you need OAC?

- Atrial fibrillation
- Artificial heart valve
- Deep vein thrombosis
- Pulmonary embolism
- Prevention with genetic clotting disorders
- Stroke
- Heart Attack
## CHADS2VASC

### Scoring Differences Between CHADS₂ and CHA₂DS₂-VASc

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>CHADS₂ (Maximum score, 6)</th>
<th>CHA₂DS₂-VASc (Maximum score, 9)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Congestive heart failure</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Hypertension</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Diabetes</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Vascular disease</td>
<td>N/A</td>
<td>1</td>
</tr>
<tr>
<td>Age 65-74</td>
<td>N/A</td>
<td>1</td>
</tr>
<tr>
<td>Age ≥75</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Female sex</td>
<td>N/A</td>
<td>1</td>
</tr>
<tr>
<td>Previous stroke/TIA</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

N/A – not applicable

[http://tinyurl.com/nwc933v](http://tinyurl.com/nwc933v)
<table>
<thead>
<tr>
<th>Types of Anticoagulation</th>
</tr>
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<tbody>
<tr>
<td><strong>OAC:</strong></td>
</tr>
<tr>
<td>Dabigatran (Pradaxa)</td>
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<tr>
<td>Epixaban (Eliquis)</td>
</tr>
<tr>
<td>Rivaroxaban (Xarelto)</td>
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<tr>
<td>Warfarin (Coumadin)</td>
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</tbody>
</table>
Dabigatran (Pradaxa)

- Direct thrombin inhibitor
- **NVAF**: 150mg BID
  - 75mg BID if CrCl 15-30
- **PE/DVT**: 150mg BID CrCl >30
- Discontinue 24-48hrs prior to surgery
  - If CrCl <50 hold 3-5 days
- Begin bridging with heparin (LMWH) or unfractionated (UFH) when next dose is due
Dabigatran (Pradaxa)

- Peak: 2-3 hrs
- Half-life: 12-14 hrs
- Excretion: Urine primarily
- Plasma levels increase with Quinidine, Verapamil, and Amiodarone
- Reversal agent Indarucizumab not FDA approved
Epixaban (Eliquis)

- **Factor Xa Inhibitor**
  - **NVAF**: 5mg BID
    - 2.5 mg BID if 2 of the following: >80yo; <60kg; Creat >1.5
  - **PE/DVT**: 10mg BID x 7 days then 5mg BID thereafter
  - **Prophylaxis**: (Hip) 2.5mg BID x 35 days (Knee) 2.5mg BID x 10 days
Epixaban (Eliquis)

- Peak: 3-4 hours
- Half-life: 12 hours
- Excretion: Urine and feces
- PT, PTT, INR inaccurate if drawn
- Discontinue 48hrs prior to surgery/24 hrs if bleeding risk/location is low
- Begin bridging with LMWH or UFH when next dose is due
Rivaroxaban (Xarelto)

- Factor Xa Inhibitor

- **NVAF**: 20mg QHS
  - 15mg QHS CrCl <50

- **PE/DVT**: 15mg BID 21 days then 20mg daily for 6 months or lifelong if recurrent; Avoid if CrCl<30

- **Prophylaxis**: (Hip) 10mg for 35 days
  - (Knee) 10mg for 12 days
Rivaroxaban (Xarelto)

- Peak: 2-4 hrs
- Half-life: 5-9 hrs; 11-13 hrs in elderly
- Excretion: 1/3 urine, 2/3 urine/feces
- Avoid giving enteral if distal to stomach
- Discontinue 24 hrs prior to surgery
- Begin bridging with LMWH or UFH when next dose is due
Warfarin (Coumadin)

- Inhibits Vit-K dependent coagulation factor synthesis (II, VII, IX, X, Protein C & S)

**NVAF/DVT/PTE:** 10mg x 2 days
Goal INR 2-3

**High Risk** (Mechanical Mitral Valve, LA thrombus):
Goal INR 2.5-3.5
Warfarin (Coumadin)

- Prophylaxis: INR 2-3 for 10-14 days, up to 35 days if major surgery
- Peak: 72-96 hours
- Half-life: 4-72 hours depending on which clotting factor
- Discontinue 3-5 days prior to surgery, INR<1.5
- Begin bridging with LMWH or UFH when INR<2.0
- Reversal agent is Vit K
Risks with Bridging OACs

- Bridging OAC is guided by risk of bleeding v. thromboembolic risk

- Adverse events include AMI, stroke, systemic embolism, major bleeding, hospitalization or death within 30 days after the procedure
Scenario 1

- An ICU patient admitted with CHF who has a h/o Afib, Mechanical MVR when would you initiate bridge therapy?

A. When pt has signs of stroke
B. Pt does not need bridge therapy
C. When INR 1.9
D. When INR 3.6

