Anticoagulant Selection

- The need to anticoagulate is primarily based on ischemic stroke risk
- CHA2DS2-VASc is the recommended ischemic stroke risk tool
- DOACs are now recommended over warfarin except in patients with mod-to-severe mitral stenosis or a mechanical heart valve
- Anti-platelets alone are NOT recommended for stroke prevention.

Anticoagulation in Non-valvular Atrial Fibrillation (v1.4)

### CHA2DS2-VASc Scoring Tool

<table>
<thead>
<tr>
<th>Condition</th>
<th>Points</th>
<th>CHA2DS2-VASc Score</th>
<th>Yearly Stroke Risk (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Congestive heart failure</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hypertension</td>
<td></td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Age &gt; 75 years</td>
<td>2</td>
<td></td>
<td>1.3</td>
</tr>
<tr>
<td>Diabetes mellitus</td>
<td>1</td>
<td></td>
<td>2.2</td>
</tr>
<tr>
<td>Stroke/TIA or thromboembolism (prior)</td>
<td>2</td>
<td></td>
<td>3.2</td>
</tr>
<tr>
<td>Vascular disease (MI, PAD, or aortic plaque)</td>
<td>1</td>
<td></td>
<td>4.0</td>
</tr>
<tr>
<td>Age 65-74 years</td>
<td>1</td>
<td></td>
<td>6.7</td>
</tr>
<tr>
<td>Sex Category (Female)</td>
<td>1</td>
<td></td>
<td>9.8</td>
</tr>
</tbody>
</table>

Score | Stroke Risk | 2019 AHA /ACC Recommendation |
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>≥3</td>
<td>High</td>
<td>Anticoagulate (men and women)</td>
</tr>
<tr>
<td>2</td>
<td>Interm./Low</td>
<td>Consider anticoagulant (men)</td>
</tr>
<tr>
<td>0</td>
<td>Low</td>
<td>Reasonable to omit anticoagulation</td>
</tr>
</tbody>
</table>

### DOACs

#### Warfarin (Coumadin®)
- Inexpensive
- Can be monitored
- Less GI bleeding
- Once daily dosing
- Many food/drug interactions
- Frequent INRs and dose changes
- May require bridging around procedures
- More intracranial bleeds
- Initial: 5mg/day (consider 2.5mg if high bleed risk)
- Subsequent dosing based on INR with target range of 2-3
- DOAC specific (see below)
- Pregnancy (except mechanical heart valves)
- Concomitant use of antibiotics, antifungals, herbal products, and inhibitors/inducers of CYP2D6, 1A2, and/or 3A4.

#### Apixaban (Eliquis®)
- Less major bleeding and lower all-cause mortality compared to warfarin
- Only DOAC to not have higher risk of GI bleed compared to warfarin
- DOAC specific (see below)
- Mechanical heart valves
- Pregnancy/nursing
- Triple positive antiphospholipid syndrome
- BMI >30, or weight >120kg
- Bariatric surgery
- Use carefully in patients with renal impairment

#### Dabigatran (Pradaxa®)
- Has an effective reversal agent but may not be readily available at all facilities
- Only DOAC to be superior to warfarin in ischemic stroke prevention
- DOAC specific (see below)
- Strong dual CYP3A4 and P-gp inhibitors and at least two of: age≥80, wt≤60kg, CrCl<1.5
- Strong dual inducers of CYP3A4 and P-gp
- Severe hepatic impairment

#### Edoxaban (Savaysa®)
- Less major bleeding compared to warfarin once/daily dosing
- DOAC specific (see below)
- CYP3A4 inhibitors if CrCl <80

#### Rivaroxaban (Xarelto®)
- Once/daily dosing
- DOAC specific (see below)
- Use carefully in patients with hepatic impairment

### Contraindications/Precautions

- Pregnancy (except mechanical heart valves)
- Concomitant use of antibiotics, antifungals, herbal products, and inhibitors/inducers of CYP2D6, 1A2, and/or 3A4.
- Baseline: INR and CBC 3-5 days after initiation and approx. 7 days after dose changes
- INRs can be gradually spaced out if stable
- Renal function, liver function, and CBC before initiation and at least yearly
- Major bleed <3 mos, if bleeding during prior bridging
- Major bleed <3 mos, if bleeding during prior bridging

### Assessment/Monitoring

- Visit www.anticoagulationtoolkit.org for patient education
- Notify if illness or change in health status (may need dose adjustment)

### Anticoagulation

- Watch for sx/sx of bleeding (especially intracranial)
- Notify healthcare provider if any sx/sx of bleeding but seek immediate medical care if serious bleeding
- Notify clinic before starting any new med (including OTC) or having proc.
- ASANSAIDs ↑ bleeding. Avoid NSAIDs and only use ASA if clear indication.
- Notify dentist or physician that you are on anticoagulant prior to procedure
- Don’t stop without consulting healthcare provider
- Provide written materials covering the above topics

### Patient Education

- High risk pt.
  - Eg. major bleed <3 mos, platelet abnormalities (including ASA use), hx of bleeding during prior bridging
  - Follow-up: at each f/u, assess for compliance, sx/sx of bleeding or thromboembolism, interacting medication, and reinforce patient education.
  - Bleeding
    - Nutritional: minor bleeding common (epistaxis, bleeding gums, etc.) Not reason to d/c anticoagulants. Teach how to prevent/manage.
    - Major bleeds: In most cases, resuming anticoagulation after bleeding controlled is best (~14 days after GI, within 1 mo. for intracranial).
  - Periprocedural: Most pts don’t need to have anticoag interrupted for low bleed risk proc. unless pt has high bleed risk (see table below) See warfarin and DOAC-specific peri-procedural info if interruption necessary.

### DOAC-specific

- Follow-up:
  - INRs 3-5 days after re-starting or any changes that can effect INR (ex. med or diet change)
  - approx. 7 days after any dose changes
  - INRs can gradually be spaced out to monthly
  - Dose changes per a standardized protocol
  - Periprocedural: If high-risk proc. or high-risk pt. (see table below), stop 3 days prior to periprocedural.
  - DOAC can be reversed 24 hours after low risk procedure and 48-72 hours after higher risk procedure.
  - Switching to another DOAC: discontinue current DOAC and start new one at next scheduled dose.

### Warfarin-specific

- High risk pt.
  - Eg. major bleed <3 mos, platelet abnormalities (including ASA use), hx of bleeding during prior bridging
  - Follow-up:
    - INRs 3-5 days after re-starting or any changes that can effect INR (ex. med or diet change)
    - approx. 7 days after any dose changes
    - INRs can gradually be spaced out to monthly
    - Dose changes per a standardized protocol
  - Periprocedural: If high-risk proc. or high-risk pt. (see table below), stop 3 days prior to periprocedural.
  - DOAC can be reversed 24 hours after low risk procedure and 48-72 hours after higher risk procedure.
  - Switching to another DOAC: discontinue current DOAC and start new one at next scheduled dose.
  - Switching to warfarin: see DOAC package insert for instructions.

- Low risk proc.
  - Eg. minor dental and dermatological, cataract/glaucoma, diagnostic endoscopies
  - Follow-up:
    - INRs 3-5 days after re-starting or any changes that can effect INR (ex. med or diet change)
    - approx. 7 days after any dose changes
    - INRs can gradually be spaced out to monthly
    - Dose changes per a standardized protocol
  - Periprocedural: If high-risk proc. or high-risk pt. (see table below), stop 3 days prior to periprocedural.
  - DOAC can be reversed 24 hours after low risk procedure and 48-72 hours after higher risk procedure.
  - Switching to another DOAC: discontinue current DOAC and start new one at next scheduled dose.

### Long-term Management

- High risk pt.
  - Eg. major surgery, procedures in highly vascularized organs (eg. kidneys), spinal procedures
  - Follow-up:
    - INRs 3-5 days after re-starting or any changes that can effect INR (ex. med or diet change)
    - approx. 7 days after any dose changes
    - INRs can gradually be spaced out to monthly
    - Dose changes per a standardized protocol
  - Periprocedural: If high-risk proc. or high-risk pt. (see table below), stop 3 days prior to periprocedural.
  - DOAC can be reversed 24 hours after low risk procedure and 48-72 hours after higher risk procedure.
  - Switching to another DOAC: discontinue current DOAC and start new one at next scheduled dose.
  - Switching to warfarin: see DOAC package insert for instructions.

For additional information about anticoagulation in Atrial Fibrillation, visit www.anticoagulationtoolkit.org
References

- Drug package inserts
  - Apixaban: https://packageinserts.bms.com/pi/pi_eliquis.pdf
  - Dabigatran: http://docs.boehringer-ingelheim.com/Prescribing%20Information/PIs/Pradaxa/Pradaxa.pdf
  - Edoxaban: http://dsi.com/prescribing-information-portlet/getPIContent?productName=Savaysa&inline=true

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