Novel oral anticoagulant (NOAC) for stroke prevention in atrial fibrillation
Special situations

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Which anticoagulant would you favor for pts. with GFR < 30ml/min?

1- Edoxaban because it has liver metabolism.

2- Low dose apixaban 2.5 mg bid.

3- Warfarin.

4- Low dose dabigatran 75 mg bid or LMWH are the only options.
Which anticoagulant would you avoid in pts. >80 yo?

1- Apixaban titrated based on body weight and renal function.

2- Warfarin

3- Dabigatran

4- Low dose rivaroxaban
What patients are included under “valvular atrial fibrillation”? 

1- Pts. with bio-prosthetic and mechanical valves.

2- Pts. with prosthetic valves and severe native valvular abnormalities (regurgitation and stenosis).

3- Mechanical and bioprosthetic valves, rheumatic mitral stenosis and mitral valve repair.

4- Mechanical valves and pts with significant mitral stenosis.
Challenges with warfarin

• Unpredictable metabolism (genetic variations, food and drug interactions). Close monitoring needed.
• Time with therapeutic INR range (TTR) is < 66%.
• Risk of major bleeding for the average 75yo hypertensive pt. is 3.1-3.8%.
• Reversal is possible but has NOT shown to improve outcomes once the severe bleeding occurs (intracranial hemorrhage).
NOAC selling points

- Fixed doses and fast onset (2-3 hours).
- Short duration (half lives of ~ 12 hours).
- Less interactions with drugs.
- As effective as Warfarin (dabigatran at 150 mg bid and apixaban 5 mg bid are even better)
- Less life-threatening bleeding (50% less intracranial hemorrhage).
- Apixaban: Mortality RRR of 10%.
Who is not a good candidate?

- **Valvular atrial fibrillation:** mechanical valves and significant mitral stenosis.
- **Stage IV CKD (GFR <30 ml/min).** In particular dabigatran.
- **Pregnancy**
Perioperative management

• It depends on “type of surgery”, “renal function” and the “specific anticoagulant”

• **Bridging is not needed** unless the pt can not take PO before or after the surgery.

• **Moderate bleeding risk** (minor procedures) : hold for 2-3 half-lives (1-2 days).

• **High bleeding risk** (major surgery) : hold for 5 half-lives (3-4 days).

• Dabigatran has the longest half life when GFR 30-50 ml/min (18 hours).
Perioperative bridging in pts. taking warfarin

- “Bridge trial” (NEJM, June 2015) found same embolic risk of around 0.3-0.4% with higher major bleeding risk (3.2% vs 1.3%) with bridge. Average CHADS was 2.3
- Most of the pts. do not need bridging with heparin!
- Mechanical heart valves, recent stroke or arterial embolisms (< 3 month), neurosurgery, CTS pts not included. Few patients with CHADS 4 or higher.
Reducing risk and Management of bleeding

- **PREVENTION!** Calculate risk of Bleeding (HAS BLED score)
- **Apixaban** is the only NOAC with reduced risk of GI bleeding compared to warfarin.
- **Gastric protection in patients at risk!** Avoid ASA and NSAIDs.
- Know when the last dose was taken! (short half lives). If last dose within 2-4 hours, oral activated charcoal may reduce absorption.
- A normal PTT suggest little dabigatran effect and PT is usually elevated with rivaroxaban.
- Reversal of antiplatelet agents (platelet transfusions).
- Prothrombin complex concentrate and aFVII for life threatening bleeding
- **Antidotes**: Idarucizumab (monoclonal Ab) for Dabigatran.
Elderly (>80 yo) and stage IV CKD

Do not make your life difficult...

Avoid Dabigatran!

Use rivaroxaban at 15 mg a day if GFR 30-50 ml/min.

Use apixaban 2.5 mg bid if 2 of 3 risk factors present (age > 80, weight < 60 kg and Creat >1.5 mg/dl).

Half dose edoxaban is also acceptable.
Switching oral anticoagulants

- Warfarin to NOAC: Monitor INR and start NOAC when it drops to 2 or less.
- NOAC to warfarin: NOACs and warfarin should be given together until the INR >2.
Patients not able to follow up with the anticoagulation clinic and can not afford NOAC.

- Active trial, NEJM 2009.

Double oral antiplatelet therapy (ASA + clopidogrel) has a 28% reduction in stroke compared with **aspirin alone** with similar risk of bleeding compared to warfarin.
Cardiology referral?
AnticoagEvaluator (ACC)

<table>
<thead>
<tr>
<th>Condition</th>
<th>1</th>
<th>2</th>
<th>3</th>
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<tbody>
<tr>
<td>CHF/LV dysfunction</td>
<td>Abnormal renal function</td>
<td>NO THERAPY</td>
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<tr>
<td>Hypertension</td>
<td>Abnormal liver function</td>
<td>ASPIRIN 80-325mg once daily</td>
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<tr>
<td>Age ≥75</td>
<td>History of major bleeding</td>
<td>ASPIRIN 75-100mg once daily + CLOPIDOGREL 75mg once daily</td>
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<tr>
<td>Diabetes (Type 1 or 2)</td>
<td>History of labile INR (time in therapeutic range &lt; 60 %)</td>
<td>WARFARIN INR 2-3</td>
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<tr>
<td>TIA or stroke</td>
<td>Current &quot;excess&quot; use of alcohol</td>
<td>DABIGATRAN 150mg twice daily</td>
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<tr>
<td>at any time in the past</td>
<td>Currently taking antiplatelet drug(s) or NSAID(s)</td>
<td>RIVAROXABAN 20mg once daily</td>
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<tr>
<td></td>
<td></td>
<td>APIXABAN 5mg twice daily</td>
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Coronary syndromes and atrial fibrillation

- Triple anticoagulation doubles the risk of bleeding compared with warfarin alone.

- Drop the aspirin in patients with stable CAD (ESC).

- Drop the aspirin and continue with plavix and the oral anticoagulant after recent ACS or PCI. NOACs could be safer than warfarin. (ongoing trials).

- Lower dose of the NOAC during triple anticoagulation is another option.