Shared Decision Making

Eva Kline-Rogers, MS,NP, AACC
Co-Director, MCORRP
Cardiovascular Nurse Practitioner
Disclosures

• ACF Board of Directors
• Consultant – Janssen Pharmaceuticals
• Consultant – American Association of NPs
• Consultant – American College of Physicians
What Is Shared Decision Making?

Increase the likelihood that patients receive the care they need in a manner consistent with best available research evidence and their values and preferences.

Shared Decision Making?

• Shared Decision-making is an open communication process between provider and patient

• An effective means of arriving at an agreement upon the best treatment strategy for many non-emergency health conditions

• Provider offers personalized information about treatment options, risks and benefits, and the patient communicates to the provider his/her values, preferences and concerns related to these variables
Health Literacy

Health Literacy: The degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions

N = 502 Veterans (22-82 years old)
Low Literacy = 29%
Marginal Literacy = 26%
Adequate Literacy = 45%

Ratzan and Parker, 2000
Half of adults in U.S. unable to accurately calculate a tip.

20% of college educated adults do not know which risks are higher:

1%       5%       10%
How To Clearly Communicate Risk To Patients

1. Present Statistical Info Using Absolute Risk
   - Relative Risk: Statin will decrease risk of MI by 30%
   - Absolute Risk: Risk of MI will decrease from 10% to 7%

2. Highlight the incremental risks associated distinctly from baseline risk

- Aspirin and anticoagulant and risk of bleeding
- Aspirin alone increases risk of bleeding.

Min 6 and Fagerlin A, 2014 Shared Decision Making
Communicating Risk

Use pictographs to communicate risk and benefit info

– Use of pictographs help all patients (regardless of numeracy) better comprehend info.
– More effective than bar graphs and tables.
– Equally effective to pie graphs.
event, like a bleed into your brain or into your stomach or colon. This does not include smaller bleeds (like bruises or cuts) that are not life threatening.

**HIGH (7% per year)**

- 2 out of 100 people have a stroke despite using an anticoagulant
- 5 out of 100 people did not have a stroke because they took an anticoagulant
- 93 out of 100 people would not have had a stroke

**INTERMEDIATE (2% per year)**

Bleeding Risk
Shared Decision Making

Patient Empowerment
• December 8, 2016 – CMS: 2 new models from the CMS Innovation Center to increase patient engagement in decisions

• Beneficiary Engagement and Incentives (BEI) Models are the Shared Decision Making Model (SDM Model) and the Direct Decision Support Model (DDS Model).

• BEI models will test different approaches to shared decision making, acknowledging that:
  o patients make decisions regarding treatment options in a variety of ways
  o facilitating a better understanding of their health and health care decisions is key towards improved patient engagement
Essential Process Elements in SDM

1. Define and explain problem
2. Present options
3. Discuss pros and cons/risks and benefits
4. Patient values and preferences
5. Discuss patient ability and self efficacy
6. Offer knowledge/communication
7. Check/clarify understanding
8. Make or defer decision
9. Arrange follow-up
Shared Decision Making: A Model for Clinical Practice

- **Choice Talk**
  - Offer choice
  - Justify choice
  - Check reaction

- **Option Talk**
  - Check knowledge
  - Describe options
  - Harms/Benefits
  - Provide patient decision support

- **Decision Talk**
  - Focus on preferences
  - Move to a decision
  - Offer review

Diagram:
- Initial Preferences
- Informed Preferences
- Choice Talk
- Option Talk
- Decision Talk
- Decision Support: Brief as well as Extensive
- Decision
Shared Decision Making Decision Aid In NVAF Patient In DOAC Era

Background:

- Prevalence of AF – treatment options
- Focus on stroke risk and treatment
- DOACS have emerged as alternatives to warfarin
- Guidelines and experts recommend shared decision making when determining best OAC.
- Most decision aids don’t include “values assessment”
Atrial Fibrillation and Anticoagulation

- A-fib represents a loss of normal contraction of the atria (upper chambers)
- Blood can become stagnant within the atria resulting in clot development
- Clots can break free and travel to the rest of the body
- In 2005, there were an estimated 3 million cases of A-fib, and it is projected that by 2050 there will be over 7 million cases.
- 70% of cases are patients over 65.
- 10% of patients over 80 have A-fib.

Afib Guideline, Circulation 2006;114:e257-e354
Prevalence of Stroke

• >85 years of age make up 17% of all stroke patients, of which 66.2% are women
• Among people 65 to 84 years of age, 53.4% of stroke patients were women
• Very elderly patients have a higher risk-adjusted mortality, have longer hospitalizations, receive less evidenced-based care, and are less likely to be discharged to their original place of residence

AHA Statistical Fact Sheet – 2013 Update

✓ Based on the Framingham Study, atrial fib is a risk factor in 1/6th of all strokes
What is coagulation?

• complex process by which blood forms clots

• Disorders of coagulation can lead to an increased risk of bleeding (hemorrhage) or clotting (thrombosis).

• involves both a cellular (platelet) and a protein (coagulation factor) component
What is Anticoagulation?

Diagram of the coagulation cascade and anticoagulants.
Atrial Fibrillation and Anticoagulation

- Embolic/Ischemic stroke is most dangerous consequence of A-fib
- Depending on co-morbidities, untreated A-fib patients can have a yearly stroke risk of >10%
- CHADS\textsubscript{2} and CHA\textsubscript{2}DS\textsubscript{2}-VASc scores are used to calculate risk
- Anticoagulants reduce risk by around 66% by preventing development of clots in the atria
DVT/PE (VTE)

- Deep vein thrombosis (DVT) = blood clot in a vein deep within the body, usually the leg
- Pulmonary Embolism (PE) = blood clot has travelled to the lungs and now blocks an artery in the lungs
- Together, these conditions are called venous thromboembolism (VTE)
- 50% of patients with DVT end up having a PE if untreated
- PE accounts for approx. 300,000 deaths a year
- 15% of sudden death cases are caused by PE

Tapson NEJM 2008
Anticoagulation Options

- Injectable thrombin and/or factor Xa inhibitors
  - Heparin
  - Low molecular weight heparin (LMWH)
    - Lovenox® (enoxaparin)

- Oral vitamin K antagonists
  - Coumadin® (warfarin)

- Oral factor Xa inhibitors
  - Xarelto® (rivaroxaban)
  - Eliquis® (apixaban)
  - Savaysa® (edoxaban)

- Oral direct thrombin Inhibitor
  - Pradaxa® (dabigatran)

- “Warfarin alternatives”
- “New agents”
- Novel Oral Anticoagulants (NOACs)
- Target-Specific Oral Anticoagulants (TSOACs)
- Direct Oral Anticoagulants (DOACs)
International Normalized Ratio (INR)

Laboratory test to measure how quickly blood will clot

Sub-therapeutic | Therapeutic | Supra-therapeutic

Typical INR target ranges:
- 2-3 (A-fib, VTE)
- 2.5-3.5 (artificial valves)
Narrow Therapeutic Range

![Graph showing odds ratios for ischemic stroke and intracranial bleeding in relation to the intensity of anticoagulation. Reprinted with permission from Fuster V et al. Circulation 2006;114:e257–354)](image-url)
DOACs

Xarelto® (rivaroxaban), Eliquis® (apixaban), Pradaxa® (dabigatran), Savaysa® (edoxaban)

- Same dose every day
- No INRs needed
- No food interactions and very few medication interactions
- Quick onset/offset (no bridging necessary)
- Can’t easily measure whether patient is taking as directed
- Reversal agents coming (Praxbind, Andexanet Alpha)
- Can’t be used for valvular a-fib
Anticoagulants can be dangerous and expensive

• First or second most common cause of adverse drug event related ED visits

• >100,000 ED visits/year

• 68% of ED visits for adverse drug events are related to acute bleeding

• 40% of these ED visits for bleeding resulted in hospitalizations

• 5 out of 12 deaths from adverse drug events are related to warfarin
Thromboembolism in Patients with AF

Assess stroke risk with CHA₂DS₂-VASc score

- Score 1: Annual stroke risk 1%, oral anticoagulants or aspirin may be considered
- Score ≥2: Annual stroke risk 2%-15%, oral anticoagulants are recommended

Balance benefit vs. bleeding risk
Calculating Risk

$\text{CHA}_2\text{DS}_2\text{-VASc Score}$

$\text{HAS-BLED Score}$
## Risk Factors for Stroke in Atrial Fibrillation

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>Relative Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Old Stroke/TIA</td>
<td>2.5</td>
</tr>
<tr>
<td>Hypertension</td>
<td>1.6</td>
</tr>
<tr>
<td>CHF</td>
<td>1.4</td>
</tr>
<tr>
<td>Increased age</td>
<td>1.4/10 years</td>
</tr>
<tr>
<td>DM</td>
<td>1.7</td>
</tr>
<tr>
<td>CAD</td>
<td>1.5</td>
</tr>
</tbody>
</table>

Arch Intern Med 1994; 154: 1449-1457
Calculating Stroke Risk using CHA\textsubscript{2}DS\textsubscript{2}-VASc Score

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>C: Hx of CHF or LVEF ≤ 40%</td>
<td>1</td>
</tr>
<tr>
<td>H: Hx of Hypertension</td>
<td>1</td>
</tr>
<tr>
<td>A2: Age ≥ 75 yr old</td>
<td>2</td>
</tr>
<tr>
<td>D: Diabetes mellitus</td>
<td>1</td>
</tr>
<tr>
<td>S2: Stroke/TIA/TE</td>
<td>2</td>
</tr>
<tr>
<td>V: Vascular disease- CAD,MI PAD</td>
<td>1</td>
</tr>
<tr>
<td>A: Age 65-74 years</td>
<td>1</td>
</tr>
<tr>
<td>Sc: Sex category -Female</td>
<td>1</td>
</tr>
</tbody>
</table>
Case Study:

- 70 yr old female
- New onset atrial fib, currently rate controlled
- Per echo – EF 60%; stress test negative
- HTN – borderline controlled
- Diabetes
- Lives with her husband
- Likes to garden, does the wash and prepares meals

**Stroke Risk**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>PTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>C: Hx of CHF or LVEF ≤ 40%</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>H: Hx HTN</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>A2: Age ≥ 75 yr old</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>D: DM</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>S2: CVA /TIA/TE</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>V: Vascular disease- CAD,MI PAD</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>A: Age 65-74 yrs</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Sc: Sex category -Female</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>4.8%</td>
</tr>
</tbody>
</table>
## Calculating Stroke Risk

<table>
<thead>
<tr>
<th>CHA$_2$DS$_2$-VASc Score</th>
<th>Stroke Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0.2%</td>
</tr>
<tr>
<td>1</td>
<td>0.6%</td>
</tr>
<tr>
<td>2</td>
<td>2.2%</td>
</tr>
<tr>
<td>3</td>
<td>3.2%</td>
</tr>
<tr>
<td>4</td>
<td>4.8%</td>
</tr>
<tr>
<td>5</td>
<td>7.2%</td>
</tr>
<tr>
<td>6</td>
<td>9.7%</td>
</tr>
<tr>
<td>7</td>
<td>11.2%</td>
</tr>
<tr>
<td>8</td>
<td>10.8%</td>
</tr>
<tr>
<td>9</td>
<td>12.2%</td>
</tr>
</tbody>
</table>

Europace 2016. 2016 Oxford University Press
## Determining Stroke Risk

### CHA\textsubscript{2}-DS\textsubscript{2}-VASc Scoring Table

<table>
<thead>
<tr>
<th>Condition</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Congestive heart failure</td>
<td>1</td>
</tr>
<tr>
<td>Hypertension</td>
<td>1</td>
</tr>
<tr>
<td>Age &gt; 75 years</td>
<td>2</td>
</tr>
<tr>
<td>Diabetes mellitus</td>
<td>1</td>
</tr>
<tr>
<td>Stroke/TIA or thromboembolism (prior)</td>
<td>2</td>
</tr>
<tr>
<td>Vascular disease (MI, PAD, or aortic plaque)</td>
<td>1</td>
</tr>
<tr>
<td>Age 65-74 years</td>
<td>1</td>
</tr>
<tr>
<td>Sex Category (Female)</td>
<td>1</td>
</tr>
</tbody>
</table>

Total score=

### CHA\textsubscript{2}-DS\textsubscript{2}-VASc Risk Stratification

<table>
<thead>
<tr>
<th>Score</th>
<th>Risk</th>
<th>ESC Recommendation</th>
<th>AHA/ACC/HRS Guidelines</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;2</td>
<td>High</td>
<td>Anticoagulate</td>
<td>Anticoagulate (Class Ia rec.)</td>
</tr>
<tr>
<td>1</td>
<td>Intermediate</td>
<td>Anticoagulate</td>
<td>Consider oral anticoagulant or aspirin (Class IIb rec.)</td>
</tr>
<tr>
<td>0</td>
<td>Low</td>
<td>Don’t Anticoagulate</td>
<td>No antithrombotic (Class IIa rec.)</td>
</tr>
</tbody>
</table>

### Yearly Stroke Risk (%)

<table>
<thead>
<tr>
<th>CHA\textsubscript{2}-DS\textsubscript{2}-VASc Score</th>
<th>No Warfarin</th>
<th>With Aspirin</th>
<th>With Warfarin</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1</td>
<td>1.3</td>
<td>1.0</td>
<td>0.5</td>
</tr>
<tr>
<td>2</td>
<td>2.2</td>
<td>1.8</td>
<td>0.8</td>
</tr>
<tr>
<td>3</td>
<td>3.2</td>
<td>2.6</td>
<td>1.1</td>
</tr>
<tr>
<td>4</td>
<td>4.0</td>
<td>3.2</td>
<td>1.4</td>
</tr>
<tr>
<td>5</td>
<td>6.7</td>
<td>5.4</td>
<td>2.3</td>
</tr>
<tr>
<td>6</td>
<td>9.8</td>
<td>7.8</td>
<td>3.4</td>
</tr>
</tbody>
</table>
Calulating Bleed Risk with HAS-BLED Score

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hypertension History</strong> (uncontrolled, $&gt;160$ mmHg systolic)</td>
<td>1</td>
</tr>
<tr>
<td><strong>Abnl Renal Disease</strong> (Dialysis, transplant, Cr $&gt;2.6$ mg/dL or $&gt;200$ µmol/L)</td>
<td>1</td>
</tr>
<tr>
<td><strong>Abnl Liver Disease</strong> (Cirrhosis, Bilirubin $&gt;2x$ NI, AST/ALT/AP $&gt;3x$ NI)</td>
<td>1</td>
</tr>
<tr>
<td><strong>Stroke History</strong></td>
<td>1</td>
</tr>
<tr>
<td><strong>Prior Major Bleeding or Predisposition to Bleeding</strong></td>
<td>1</td>
</tr>
<tr>
<td><strong>Labile INR?</strong> (Unstable/high INRs)</td>
<td>1</td>
</tr>
<tr>
<td><strong>Elderly Age $\geq 65$ yrs</strong></td>
<td>1</td>
</tr>
<tr>
<td><strong>Drug Use Predisposing to Bleeding</strong> (Antiplatelet agents, NSAIDs)</td>
<td>1</td>
</tr>
<tr>
<td><strong>Alcohol Usage History</strong></td>
<td>1</td>
</tr>
</tbody>
</table>
## Risk of Major Bleeding

<table>
<thead>
<tr>
<th>HAS-BLED score</th>
<th>n</th>
<th>Bleeds</th>
<th>Bleeds/100 pts</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>789</td>
<td>9</td>
<td>1.13</td>
</tr>
<tr>
<td>1</td>
<td>1286</td>
<td>13</td>
<td>1.02</td>
</tr>
<tr>
<td>2</td>
<td>744</td>
<td>14</td>
<td>1.88</td>
</tr>
<tr>
<td>3</td>
<td>187</td>
<td>7</td>
<td>3.7</td>
</tr>
<tr>
<td>4</td>
<td>46</td>
<td>4</td>
<td>8.7</td>
</tr>
<tr>
<td>5</td>
<td>8</td>
<td>1</td>
<td>12.5</td>
</tr>
<tr>
<td>Any score</td>
<td>3071</td>
<td>48</td>
<td>1.56</td>
</tr>
</tbody>
</table>

Pisters R, Lane DA, Nieuwlaat R, de Vos CB, Crijns HJ, Lip GY.
## Case Study:

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hypertension History</strong> (uncontrolled, &gt;160 mmHg systolic)</td>
<td>1</td>
</tr>
<tr>
<td><strong>Abnl Renal Disease</strong> (Dialysis, transplant, Cr &gt;2.6 mg/dL or &gt;200 µmol/L)</td>
<td>1</td>
</tr>
<tr>
<td><strong>Abnl Liver Disease</strong> (Cirrhosis, Bilirubin &gt;2x NI, AST/ALT/AP &gt;3x NI)</td>
<td>1</td>
</tr>
<tr>
<td><strong>Stroke History</strong></td>
<td>1</td>
</tr>
<tr>
<td><strong>Prior Major Bleeding or Predisposition to Bleeding</strong></td>
<td>1</td>
</tr>
<tr>
<td><strong>Labile INR?</strong> (Unstable/high INRs)</td>
<td>1</td>
</tr>
<tr>
<td><strong>Elderly Age ≥65 yrs</strong></td>
<td>1</td>
</tr>
<tr>
<td><strong>Drug Use Predisposing to Bleeding</strong> (Antiplatelet agents, NSAIDs)</td>
<td>1</td>
</tr>
<tr>
<td><strong>Alcohol Usage History</strong></td>
<td>1</td>
</tr>
</tbody>
</table>

**Bleed Risk** 3.7%
Hemorrhage with Anticoagulation

- Minor bleeding such as nose bleeds and increased bruising are common
- About 2-4% of patients per year will experience major bleeds requiring urgent medical attention and blood transfusions
- Intracranial hemorrhage is most dangerous bleed
Improves decision-making process by:

A. Increasing knowledge
B. Increasing risk communication
C. Decreasing decisional conflict
D. Increasing participation in care
E. Increasing value congruence
Shared Decision Making Tool: Patients

- CHAD-VASc, HAS-BLED Scores

- Followed by personal preferences questionnaire
Shared Decision Making In NVAF: Development of Decision Aid

– Provider interviews
– Patient focus groups
– Semi-structured interviews

– Led by: Geoff Barnes MD, MSc
A. Determine stroke risk using CHADS-VASc

B. Determine bleeding risk using HAS-BLED

C. Mechanical valve?
Development of SDM Tool for Patients

1. Will a co-pay of > $10 per month be prohibitive?
2. Would you rather take a drug that:
   - A. Used for > 50 years, lots of experience
   - B. New – little better at preventing strokes, less is known about long term effects
   - A. Requires close monitoring with blood draws
   - B. Taken once or twice daily with no monitoring
   - A. Dose adjusted frequently
   - B. Same dose for everyone
   - A. Easily reversible
   - B. Not reversible (yet) but less bleeding strokes
SDM Tool for Patients

• Which of the prior 4 questions is most important to you?:
  – 1. Lots of experience vs new
  – 2. Close monitoring (call and blood draws) vs no monitoring
  – 3. Frequent changes in dose vs one dose for all
  – 4. Reversible vs non-reversible
Shared Decision Making Tool: Patients

1. Cost
2. Food-Drug Interaction
3. Food-Food Interaction
4. Side Effects
5. Convenience of Clinic/Lab Location
6. Other Barriers to Compliance (support system, language barriers)
Introduction for Patients

Atrial Fibrillation, or Afib, is a type of irregular heart beat in the upper chambers of the heart (the atria). As a part of this irregular function, clots may form in those upper chambers. Blood clots can then travel to other parts of the body, including the brain, and cause a stroke (sometimes known as a “brain attack”). Strokes are one of the most serious risks for people with atrial fibrillation.

Medicines that help prevent blood clots, “anticoagulants” or “blood thinners”, can reduce this risk of stroke. In the past, warfarin (Coumadin) was the only blood thinner available. Over the past several years, four additional blood thinners have become available. Each of these medicines has pros and cons. Only you and your health care provider can determine which one is best for you.

We will now ask you several brief questions. These questions will help determine which blood thinner may be best for you based on your personal health history and your preferences for the different anticoagulant options.
Medication Preferences

Please answer all questions below by clicking on your preferred response.

01 Do you prefer to take a medicine...
- That has been used since 1954 with very good prevention against stroke?
- That has been used since the early 2010s and may be a little better in preventing strokes, but less is known about long-term effects?

02 Would you rather take a medicine...
- That is closely monitored (watched or checked) by a nurse/pharmacist with frequent blood draws and phone calls or visits?
- That is taken once or twice a day with very few phone calls or blood tests?

03 Would you prefer to take a medicine...
- Where the dose is frequently changed to the results of your blood draws?
- Where the dose is the same for everyone who takes it without any blood draws?

04 Will a medication co-pay of more than $10 per month be too costly for you?
- Yes
- No

Click "Results" after you enter all responses.

RESULTS
event, like a bleed into your brain or into your stomach or colon. This does not include smaller bleeds (like bruises or cuts) that are not life threatening.

**HIGH (7% per year)**

- 2 out of 100 people have a stroke despite using an anticoagulant
- 5 out of 100 people did not have a stroke because they took an anticoagulant
- 93 out of 100 people would not have had a stroke

**INTERMEDIATE (2% per year)**

- Bleeding Risk
Shared Decision Making Tool: Patients

• Receive a personalized anticoagulant recommendation based on demographic information, comorbidities, and personal preferences.
Assessing the Impact of the Shared Decision Making Tool

- Patient surveys administered at one and 3-12 months.
- Primary outcome: congruence of values
  - Questions and OAC choice.
- Secondary:
  - Persistence of values questions.
  - Associations between degree of decision regret and likelihood to choose DOAC.
MAQI
Patient Education Projects
Initially focused on warfarin – now DOACS

Patient knowledge
- Need for anticoagulation
- Food interactions
- Drug interactions
- When to notify clinic
- Ways to improve INR stability

Decreased adverse events and cost
- Higher TTR
- Appropriate use of ED
- Higher compliance
# MAQI² Anticoagulation Toolkit

## Table of Contents

### Determining need and evaluating risk
- Atrial fibrillation risk evaluation tools
  - Stroke risk evaluation in A-fib patients (p. 2)
  - Bleeding risk evaluation (p. 4)
- Venous Thromboembolism (VTE) risk evaluation tools
  - Bleeding risk evaluation (p. 5)
- Other risk evaluation models
  - Bleeding risk models (p. 6)
  - Online calculators and apps (p. 6)

### Anticoagulant selection
- FDA approved oral anticoagulants, indications, and dosages (p. 7)
- Comparison of anticoagulants (p. 11)
- Anticoagulant selection based on patient factors (p. 13)
- Identifying patients appropriate for TSOACs (p. 14)
- Pros and cons of TSOACs (p. 15)
- Anticoagulant selection decision tree (p. 16)

## Warfarin

### Initiation
- Things to consider before starting warfarin (p. 17)
- Target INR and length of treatment (p. 18)
- Starting dose (p. 21)
- Initial dosing nomograms (p. 23)
- Converting from TSOACs to warfarin (p. 25)
- Drug-Drug interactions (p. 26)

### Patient education
- Education topic checklist (p. 27)
- Education materials (p. 28)

### Long-term management
- Maintenance dosing and recall nomogram (p. 29)
- Management around minor procedures (p. 31)
- Perioperative bridging (p. 32)
- Elective Cardioversion (p. 39)
- Managing interactive drugs (p. 40)
- Routine follow-up questions (p. 42)
- Epistaxis management protocol (p. 43)

## What is the indication for anticoagulation?

- Venous atrial fibrillation
- Valve replacement
- Myocardial infarction

## Conversion from TSOACs to Warfarin (Coumadin®)

### Drug #1
- Older, more established
- Strong interaction with diet and medications
- Frequent monitoring and dose adjustments
- Higher risk of intracranial hemorrhage

### Drug #2
- Never used before
- No diet interaction and fewer medications
- Cannot reverse or easily monitor anticoagulation
- Frequent monitoring and dose adjustments
- Lower risk of intracranial hemorrhage

---

### Table: Conversion from TSOACs to Warfarin (Coumadin®)

<table>
<thead>
<tr>
<th>Generic (Trade Name)</th>
<th>Instructions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dabigatran (Pradaxa®)</td>
<td></td>
</tr>
</tbody>
</table>
| - Adjust the starting time of warfarin based on creatinine clearance as follows:  
  - For CrCl < 50 mL/min, start warfarin 3 days before discontinuing dabigatran.  
  - For CrCl 30-50 mL/min, start warfarin 2 days before discontinuing dabigatran.  
  - For CrCl 15-30 mL/min, start warfarin 1 day before discontinuing dabigatran.  
  - For CrCl < 15 mL/min, no recommendations can be made.  
| Apixaban (Elagil®) |
| - Apixaban affects INR, so INR measurements during co-administration with warfarin may not be useful for determining appropriate dose of warfarin.  
| - If continuous anticoagulation is necessary in A-fib, discontinue apixaban and begin Warfarin (Coumadin®) with a concomitant percutaneous anticoagulant when the next dose of apixaban would have been due, discontinuing the percutaneous anticoagulant when INR reaches goal range.  
| Rivaroxaban (Xarelto®) |
| - No clinical trial data are available to guide converting patients from rivaroxaban to warfarin.  
| - Rivaroxaban affects INR, so INR measurements made concomitantly with warfarin may not be useful for determining the appropriate dose of warfarin.  
| - If continuous anticoagulation is necessary in A-fib, discontinue rivaroxaban and begin warfarin bridged with a concomitant percutaneous anticoagulant when the next dose of rivaroxaban would have been due.  
| Edoxaban (Savaysa®) |
| - For patients on 60 mg of edoxaban, reduce dose to 30 mg and begin warfarin concomitantly.  
| - For patients on 30 mg of edoxaban, reduce dose to 15 mg and begin warfarin concomitantly.  
| - During transition, INR should be done at least weekly prior to daily dose of edoxaban (to minimize influence on INR).  
| - Discontinue edoxaban once a stable INR ≥ 2.0 is achieved.  

---

### Decision Tree for Warfarin

1. Does patient have CrCl < 30 or moderate to severe hepatic impairment (Child-Pugh B or C)?
   - Yes: Will patient have trouble paying for a TSOAC?
     - Yes: Which of these options would patient/family prefer?
       - Drug #1
       - Drug #2
     - No: Does patient have any of these characteristics?
       - Unstable diet or malnutrition?
         - Yes: What is the indication for anticoagulation?
         - No: Which of these options would patient/family prefer?
       - Frequent illness or health status changes?
         - No: Which of these options would patient/family prefer?
         - Yes: What is the indication for anticoagulation?
       - Frequent medication changes or need for medications that interact with warfarin and small antiplatelets?
         - No: What is the indication for anticoagulation?
         - Yes: Which of these options would patient/family prefer?
       - Frequent medical procedures with bleeding risk?
         - No: Which of these options would patient/family prefer?
         - Yes: What is the indication for anticoagulation?
MAQI² Anticoagulation Toolkit
anticoagulationtoolkit.org
Mobile app: search “MAQI” in App Store
Patient Toolkit

Updated 2/2015.

   a. What is anticoagulation?
   b. How is Coumadin® (warfarin) monitored?
   c. How will diet affect Coumadin® (warfarin)?
   d. How do other drugs affect Coumadin® (warfarin)?
   e. How can I reduce my risk of complications?
   f. Patient Resources
   g. Acknowledgements

   a. What is anticoagulation?
   b. How are anticoagulants monitored?
   c. Eliquis® (apixaban)
   d. Pradaxa® (dabigatran)
   e. Xarelto® (rivaroxaban)
   f. Savaysa® (edoxaban)
   g. Patient Resources
   h. Acknowledgements

DISCLAIMER:
This toolkit is for informational purposes only and does not, itself, constitute medical advice. The toolkit is not a replacement for careful medical judgments by qualified medical personnel. There may be information in the toolkit that does not apply to or may be inappropriate for the medical situation at hand.
Decision support tools
In Conclusion

• Atrial fibrillation is associated with an increased risk for stroke

• There are tools available to assess for risk of stroke and bleed in NVAF

• There are tools available to assist patients/providers in making a shared decision regarding care
In Conclusion

- **Shared Decision Making = Patient Empowerment**
- Health decision with choices/risks/benefits
- Risk assessment
- Decision tools to help illustrate risk
- Discussion re: choices
- Decision by patient w/ provider support
Websites for SDM Tools/Information

ACC’s AF Decision Aid for Anticoagulation for Non-Valvular AF
https://www.acc.org/tools-and.../anticoagulation-shared-decision-making-tool

Strategies for Chronic Care: Provider Resources
www.strategiesforchroniccare.com

The SHARE Approach
https://www.ahrq.gov/professionals/education/curriculum-tools/shareddecisionmaking/

Mayo Clinic Shared Decision Making National Resource Centershareddecisions.mayoclinic.org/