Optimal Anticoagulation Therapy:
A Prescription for Improvement

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CPE Information (cont’d)
Educational Objectives
• Describe steps involved in performing a validated and balanced risk assessment for thrombosis and bleeding to identify candidates for oral anticoagulation.
• Review current clinical evidence guiding the selection of oral anticoagulants for individual patients.
• Describe evidence-based strategies for providing periprocedural management and managing bleeding associated with nonwarfarin oral anticoagulants.

Disclosure of Unlabeled Use
This educational activity may contain discussion of published and/or investigational uses of agents that are not indicated by the FDA.

Agenda
• Call to Action
• Evidence-Based Risk Assessment and Treatment Decisions in Atrial Fibrillation
• Selecting an Optimal Oral Anticoagulant
• Managing Clinical Challenges
• Selecting a NOAC for Secondary VTE Prevention
• Q&A

CALL TO ACTION
Optimal Anticoagulation Therapy: A Prescription for Improvement

Atrial Fibrillation (AF): Prevalence and Consequences

- 5.1 million with AF in US\(^1\)
  - Projected to double by 2050
  - 100,000–125,000 embolic AF-related strokes/\(\text{y}^2\)
  - >70% of AF is nonvalvular (NVAF)\(^3\)

Most AF-related strokes are preventable with appropriate anticoagulation therapy\(^2\)

AF is AF that occurs in the absence of heart valves
2. Moderate to severe mitral stenosis

Impact of Venous Thromboembolism (VTE)

- Deaths
  - 100,000/\(\text{y}\)^1
  - PE: leading preventable cause of hospital death\(^2\)
- Hospitalizations
  - >550,000 (2007–2009)^3
  - Increase with age and comorbidities\(^2,4\)
- 10-y recurrence (CR)^5
  - 20.5%, provoked
  - 28.4%, unprovoked

Anticoagulant-Related Medication Errors: Common and Preventable

- Use of abbreviations\(^1\)
  - Cardiologist wrote NOAC, meaning “nonwarfarin anticoagulant,” was misinterpreted as “no anticoagulant” and patient’s warfarin was discontinued.
- Dosing differs by indication and there are loading and maintenance doses\(^2\)
  - Lack of clarity of rivaroxaban dosing VTE treatment (15 mg BIQ for 21 d and 20 mg QD thereafter) resulted in patient self-administering 50 mg QD. “The patient took both the loading dose and maintenance dose together, probably because both prescriptions were filled at the same time.”
  - Importance of patient education
- Dosage adjustment for renal function\(^2\)
- Many NVAF patients are under-dosed\(^4\)
- Use of reverse agents to manage bleeding events\(^2\)

Goals of AC Therapy

Optimize Benefits, Minimize Risk\(^1,3\)

- Assess thrombosis risk
- Control modifiable risk factors

Bleeding\(^1\)

- Assess bleeding risk
- Identify “red flags”
- Control modifiable risk factors

Choose an evidence-based anticoagulant regimen

- Appropriate dosage adjustment
- Identify drug-drug interactions
- Provide education
- Provide ongoing monitoring and adherence

An ideal anticoagulant will provide the greatest reduction in thromboembolism with the lowest incidence of bleeding.

Pharmacist-Managed AC Service

- 802-bed Henry Ford Hospital, Detroit, MI
- Inpatient AC service staffed by 5 pharmacist FTEs
- Patients covered by the pharmacist-led service had
  - 1/3 fewer bleeds, thrombotic events or incidents of INR values >5
  - 73% success rate with post-discharge transitions

“Even if the anticoagulation has been a small part of the hospitalization, it’s managing that transition that’s the key advantage.”

Hospital Pharmacy Inpatient AC Services

- Ensure patients receive appropriate AC
- Promote interdisciplinary cooperation and facilitate transitions in AC care from inpatient to outpatient
- Coordinate individualized care of patients within AC management programs
- Educate patients, caregivers, prescribers about AC medications
- Uses, drug interactions, adverse effects, importance of adherence, recommended laboratory testing and other monitoring

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Optimal Anticoagulation Therapy: A Prescription for Improvement

EVIDENCE-BASED RISK ASSESSMENT AND TREATMENT DECISIONS IN AF

Clinical Case 1

**MK, an 80-year-old woman with new onset NVAF**

- Presents to ED after falling at home
- Recent onset of weakness, palpitations, dizziness
- Past medical history:
  - Hypertension (well controlled)
  - CKD (CrCl = 40 mL/min)
  - Electrocardiogram: new onset NVAF

**Clinical Decision Aids Improve Risk Assessment in NVAF**

<table>
<thead>
<tr>
<th>Assess Stroke Risk: CHADS-VASc</th>
<th>Assess Bleed Risk: HAS-BLED</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Risk Factor</strong></td>
<td><strong>Score</strong></td>
</tr>
<tr>
<td>Congestive heart failure / LVEF ≤ 40%</td>
<td>1</td>
</tr>
<tr>
<td>Diabetes mellitus</td>
<td>1</td>
</tr>
<tr>
<td>Age ≥ 75</td>
<td>1</td>
</tr>
<tr>
<td>Chronic kidney disease</td>
<td>1</td>
</tr>
<tr>
<td>Vascular disease, including prior MI, peripheral artery disease or aortic plaque</td>
<td>1</td>
</tr>
<tr>
<td>Age 60-74</td>
<td>1</td>
</tr>
</tbody>
</table>

*Score ≥ 3 indicates potentially high risk for bleeding.*

**Clinical Case 1 (cont’d)**

**MK, an 80-year-old woman with new onset NVAF, well controlled hypertension**

Current medications
- Aspirin 81 mg po QD
- Metoprolol 50 mg po BID
- Simvastatin 80 mg po QD
- Calcium and vitamin D po QD

Plan
- Admit for evaluation and management
- Start amiodarone and consider anticoagulation

RE-LY Trial: Major Bleeding in Patients Using Antiplatelet Therapy

**Clinical Case 1 (cont’d)**

**CHA2DS-VASc score = 5**

- Hyperension
- Age ≥ 75
- Diabetes mellitus
- Prior history of stroke, TIA, or TE
- Vascular disease, including prior MI, peripheral artery disease or aortic plaque
- Age 60-74
- Sex category = female

**HAS-BLED score = 3**

- Hypertension
- Age ≥ 60
- SaH2 (active bleeding)
- Labile INR: TTR < 60%
- Alcohol abuse: > 8 units/wk
- Chronic kidney disease

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To agree to initiate antithrombotic therapy, patients required

- ≥0.8% (NNT=125) annual absolute RR and 15% relative RR for stroke
- Willingness to endure 4.4 major bleeds to prevent 1 stroke

Help Patients Make Informed Decisions

Antithrombotic Therapy Recommendations

ACC (Based on CHA₂DS₂-VASc Score)

- Score = 0
  - None or aspirin
- Score ≥1
  - NOAC or warfarin

ACC/AHA/HRS

- Score = 0
  - None
- Score = 1
  - nothing, aspirin, NOAC, or warfarin
- Score ≥2
  - NOAC or warfarin

ESC 2012

- Score = 0
  - None
- Score ≥1
  - NOAC or warfarin (NOAC preferred)

*Therapy should be individualized based on shared decision-making after discussion of absolute and RRs of stroke and bleeding, and patient’s values and preferences.

ACC AnticoagEvaluator App

Synthesizes clinical trial data for antithrombotic therapy options and uses it (with individual patient characteristics) to calculate individualized annual risk of ischemic stroke and thromboembolism and concurrent annual risk of major bleed

Available on iPad, iPhone, Android phone, and Android tablet

SELECTING AN OPTIMAL ORAL ANTICOAGULANT

NOACs: Efficacy in NVAF

As Effective as Warfarin in Reducing SSE*, Primary Efficacy Outcome

<table>
<thead>
<tr>
<th>Anticoagulant</th>
<th>Risk Ratio</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apixaban 5 mg BID</td>
<td>0.89 [0.67, 0.96]</td>
<td></td>
</tr>
<tr>
<td>Dabigatran 110 mg BID</td>
<td>0.92 [0.75, 1.12]</td>
<td></td>
</tr>
<tr>
<td>Dabigatran 150 mg BID</td>
<td>0.67 [0.54, 0.83]</td>
<td></td>
</tr>
<tr>
<td>Edoxaban 30 mg daily</td>
<td>1.14 [0.99, 1.31]</td>
<td></td>
</tr>
<tr>
<td>Edoxaban 60 mg daily</td>
<td>0.89 [0.75, 1.02]</td>
<td></td>
</tr>
<tr>
<td>Rivaroxaban 20 mg daily</td>
<td>0.88 [0.75, 1.03]</td>
<td></td>
</tr>
</tbody>
</table>

*Supported by meta-analysis, post marketing analyses of effectiveness, safety and net benefit of NOACs in large registries and modeling studies

NOACs: Safety in NVAF

Reduced Risk for Hemorrhagic Stroke Compared with Warfarin*

<table>
<thead>
<tr>
<th>Anticoagulant</th>
<th>Risk Ratio</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apixaban 5 mg BID</td>
<td>0.51 [0.35, 0.75]</td>
<td></td>
</tr>
<tr>
<td>Dabigatran 110 mg BID</td>
<td>0.31 [0.17, 0.57]</td>
<td></td>
</tr>
<tr>
<td>Dabigatran 150 mg BID</td>
<td>0.26 [0.14, 0.50]</td>
<td></td>
</tr>
<tr>
<td>Edoxaban 30 mg daily</td>
<td>0.33 [0.22, 0.50]</td>
<td></td>
</tr>
<tr>
<td>Edoxaban 60 mg daily</td>
<td>0.54 [0.39, 0.77]</td>
<td></td>
</tr>
<tr>
<td>Rivaroxaban 20 mg daily</td>
<td>0.58 [0.37, 0.92]</td>
<td></td>
</tr>
</tbody>
</table>

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MK is started on Aspirin 81 mg - HTN, PAD, CKD (baseline Hg/She returns for her first follow-up visit 10 days after hospital discharge but is then lost to follow-up

Clinical Case 1 (cont’d)

MK, an 80-year-old woman with new onset NVAF, CrCl = 40 mL/min

Treatment course

- MK is started on edoxaban 30 mg po QD and amiodarone 200 mg po QD
- All other medications, including aspirin, are continued
- She returns for her first follow-up visit 10 days after hospital discharge but is then lost to follow-up

Potential Drug Interactions with NOACs

<table>
<thead>
<tr>
<th>Interaction Effect</th>
<th>Drugs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strong CYP 3A4 Inducers&lt;sup&gt;a&lt;/sup&gt;</td>
<td>Carbamazepine, phenytoin, rifampin, St John’s wort</td>
</tr>
<tr>
<td>Strong CYP 3A4 Inducers&lt;sup&gt;b&lt;/sup&gt;</td>
<td>Conavaptan, cyclosporine, indinavir, itraconazole, ketoconazole, nelfinavir</td>
</tr>
<tr>
<td>Dual CYP 3A4 &amp; P-gp Inhibitors&lt;sup&gt;c&lt;/sup&gt;</td>
<td>Barbipranolol, carbastazepine, diazepam, phenytoin, rifampin, St John’s wort</td>
</tr>
<tr>
<td>Dual CYP 3A4 &amp; P-gp Inducers&lt;sup&gt;d&lt;/sup&gt;</td>
<td>Amiodarone, carvedilol, clofibric acid, cyclosporine, diltiazem, drospirenone, fosinopril, itraconazole, ketoconazole, quinidine, ranolazine, ritonavir, tacrolimus, verapamil</td>
</tr>
<tr>
<td>Strong P-gp Inhibitors&lt;sup&gt;e&lt;/sup&gt;</td>
<td>Barbipranolol, carbastazepine, diazepam, phenytoin, rifampin, St John’s wort</td>
</tr>
</tbody>
</table>

<sup>a</sup>Not recommended to co-administer with NOACs; avoid if possible

MK, an 80-year-old woman with new onset NVAF

Treatment course

- 4 mo later, MK presents to ED with 2-day history of vomiting bright red blood; diagnosed with an upper GI bleed per EGD
- BP: 104/62 mm Hg; P: 88 bpm
- Hg/Hct: 12 g/dL, 32%

Current home medications

- Aspirin 81 mg po QD, metoprolol 50 mg po BID, simvastatin 80 mg po QD, edoxaban 60 mg po QD, amiodarone 200 mg po QD

<sup>b</sup>Normal haemoglobin

Clinical Case 1 (cont’d)

MK, an 80-year-old woman with new onset NVAF

Treatment course

- 4 mo later, MK presents to ED with 2-day history of vomiting bright red blood; diagnosed with an upper GI bleed per EGD
- BP: 104/62 mm Hg; P: 88 bpm
- Hg/Hct: 12 g/dL, 32%

Current home medications

- Aspirin 81 mg po QD, metoprolol 50 mg po BID, simvastatin 80 mg po QD, edoxaban 60 mg po QD, amiodarone 200 mg po QD
Evaluate Timing of Last Dose and Renal Function

<table>
<thead>
<tr>
<th>Property</th>
<th>Dabigatran</th>
<th>Rivaroxaban</th>
<th>Apixaban</th>
<th>Edoxaban</th>
</tr>
</thead>
<tbody>
<tr>
<td>Renal clearance of absorbed dose, %</td>
<td>80</td>
<td>33</td>
<td>25</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Half-life in renal impairment, h</td>
<td>14-17</td>
<td>5-9</td>
<td>8-15</td>
<td>10.14</td>
</tr>
<tr>
<td>CrCl &gt;80 mL/min</td>
<td>16.6</td>
<td>8.7</td>
<td>14.6</td>
<td>8.6</td>
</tr>
<tr>
<td>CrCl 50-79 mL/min</td>
<td>18.7</td>
<td>9.0</td>
<td>17.6</td>
<td>9.4</td>
</tr>
<tr>
<td>CrCl &lt;30 mL/min</td>
<td>27.5</td>
<td>9.5</td>
<td>17.3</td>
<td>16.9</td>
</tr>
<tr>
<td>Dialyzable</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

Specific Reversal Agents for NOACs: Approved and in Development

**Idarucizumab**
- FDA approved
- Reverses dabigatran

**Andexanet alfa**
- Investigational
- Reverses factor Xa inhibitors
- PDUFA Date: Aug 2016
- Phase 3: rivaroxaban, apixaban, betrixaban
- Planned for etexilate

**Ciraparantag**
- Investigational
- Reverses all NOACs (broad-spectrum)
- FDA Fast Track Status
- Phase 2: rivaroxaban, enoxaparin

Managing NOAC Bleeding: EHRA 2015 Recommendations

**MILD BLEEDING**
- Delay/discontinue next dose
- Reconsider concomitant medication

**MODERATE TO SEVERE BLEEDING**
- Mechanical compression
- Endoscopic hemostasis if GI bleed
- Surgical hemostasis
- Fluid replacement (colloids if needed)
- RBC substitution if needed
- Fresh frozen plasma (as plasma expander)
- Platelet substitution if platelet count ≤60 x 10^9/L

**LIFE-THREATENING BLEEDING**
- Consider
  - PCC 50 U/kg, additional 25 U/kg if indicated
  - rFVIIa (Feiba®) 50 U/kg, max 200 U/kg/d
  - rFVIIa (NovoSeven®) 90 µg/kg (no data about additional benefit)

Idarucizumab Reversed Anticoagulation Effects in 100% of Patients on Dabigatran

- Prospective cohort study evaluating safety idarucizumab, capacity to reverse anticoagulant effects of dabigatran in patients (median age 76.5 y):
  - With serious bleeding (group A, N=51):
    - With minor bleeding (group B, N=39):
      - Median maximum % reversal: 100% (95% CI, 100 - 100)
      - Normalized test results in 88% to 98%
      - Effect evident within minutes
      - Hemostasis restored at a median of 11.4 h (N=35 patients in group A)

Temporary Interruption Before Elective Surgery

<table>
<thead>
<tr>
<th>CrCl, mL/min</th>
<th>Dabigatran</th>
<th>Apixaban, Edoxaban</th>
</tr>
</thead>
<tbody>
<tr>
<td>15–30</td>
<td>Not indicated</td>
<td>236 h</td>
</tr>
<tr>
<td>30–50</td>
<td>248 h</td>
<td>296 h</td>
</tr>
<tr>
<td>50–80</td>
<td>236 h</td>
<td>272 h</td>
</tr>
<tr>
<td>80–100</td>
<td>224 h</td>
<td>248 h</td>
</tr>
</tbody>
</table>

Temporarily interrupted dabigatran for elective surgery, surgical procedures due to bleeding risk

Optimal Anticoagulation Therapy: A Prescription for Improvement
Restarting Anticoagulation

- Prospective observational cohort study (N=197) of GI bleed (26% NOAC, 74% warfarin)\(^1\)
- Within 90 d, AC continuation independently associated with lower risk of major thrombotic episodes (HR=0.121, 95% CI=0.006-0.812, \(P=0.03\))
- No increased risk for recurrent GIB (HR=2.17, 95% CI=0.861-6.67, \(P=0.10\))

Per GI guidelines, resume AC when risk for CV complications outweighs bleeding risk\(^2\)

Defer re-initiation of therapy until after first week following bleeding event

\(\text{GI, gastrointestinal; GIB, gastrointestinal bleeding; HR, hazard ratio; CI, confidence interval; CV, cardiovascular}\)

Managing Bleeding Risk with NOACs

- Improve appropriate prescribing
- Improve individual benefit-risk by tailoring NOAC dose (renal function, drug interactions)
- Provide patient education
- Manage modifiable risk factors:
  - BP
  - INR
  - Hepatic/renal function
  - Antiplatelet agents
  - Alcohol ingestion
  - NSAIDs
  - SNRIs
  - SSRIs

\(\text{NOAC, nonsteroidal anti-inflammatory drug; SNRI, serotonin and norepinephrine reuptake inhibitor; SSRI, selective serotonin reuptake inhibitor}\)

SELECTING A NOAC FOR SECONDARY VTE PREVENTION

AT10 Guidelines for VTE Treatment

3-mo duration of AC for

- Surgical-provoked VTE (Grade 1C)
- Nonsurgical transient risk factor (Grade 1B)
- Proximal DVT leg (Grade 2B)
- Distal DVT leg (Grade 2C)
- First unprovoked DVT leg (either proximal or distal) or PE (Grade 1B)

Cancer-associated VTE

- LMWH first 3 mo (Grade 2C)
- Extended duration of treatment regardless of bleed risk (Grade 1B/2B)
  - LMWH over VKA or NOAC (Grade 2C)

Choice of agent

- For first 3 mo (and no cancer): NOAC preferred over VKA (Grade 2B)
  - Initial parenteral AC with dabigatran, edoxaban

Extended therapy

- First unprovoked DVT, PE: Evaluate risk-benefit of extended therapy at 3 mo
  - Low, moderate bleeding risk: extend therapy (Grade 2B)
  - High bleeding risk: 3 mo (Grade 1B)
  - If unprovoked and stopping AC and no contraindication: aspirin (Grade 2C)
  - Second unprovoked VTE (grade by bleeding risk 1B/2B/2B)
  - Use same as initial choice (Grade 2C)
  - May change in response to patient preference

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AT10 Guidelines for VTE Treatment (cont’d)

- Recurrent VTE while on VKA or NOAC
  - Switch to LMWH at least temporarily (Grade 2C)
  - If already on LMWH, increase dose (Grade 2C)
- Recommend compression stockings for acute DVT leg (Grade 2B)
- Recommend against use of IVC filter in patients treated with anticoagulants (Grade 1B)

2016 AC Forum VTE Treatment Guidance: Choice of Agent

<table>
<thead>
<tr>
<th>Duration</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 mo</td>
<td>Distal DVT</td>
</tr>
</tbody>
</table>
|          | Surgical-associated VTE
|          | Medical illness-associated VTE |
|          | Travel-associated VTE (within 4 wk of travel; prescribe prophylaxis for future travel) |
| Extended | Cancer: while active, under treatment |
|          | Unprovoked |
|          | Reassess on annual basis |
|          | Limited data beyond 2 y |

NOAC\textsuperscript{a} vs Warfarin for Acute VTE

<table>
<thead>
<tr>
<th>Outcome</th>
<th>RR</th>
<th>Lower Limit</th>
<th>Upper Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recurrent VTE</td>
<td>0.88</td>
<td>0.74</td>
<td>1.05</td>
</tr>
<tr>
<td>Fatal PE</td>
<td>1.02</td>
<td>0.39</td>
<td>5.96</td>
</tr>
<tr>
<td>Overall Mortality</td>
<td>0.97</td>
<td>0.83</td>
<td>1.14</td>
</tr>
</tbody>
</table>

Clinical Case 2

**BR, a 52-year-old man with VTE and PE**

- **Presentation**
  - Presents to ED with swollen right lower extremity, shortness of breath
  - Diagnosed with unprovoked right lower leg DVT, subsegmental PE
  - No previous or family history of VTE
- **Past medical history**
  - Hypertension
  - Diabetes mellitus
  - Obesity
  - Chronic kidney disease (CrCl = 50 mL/min)
- **Current medications**
  - Lisinopril, amldopine, insulin
- **Plan**
  - 1 dose of enoxaparin in the ED

**DVT, deep venous thrombosis**
Optimal Anticoagulation Therapy: A Prescription for Improvement

NOACs: Onset of Anticoagulation Effect for VTE

<table>
<thead>
<tr>
<th>VTE</th>
<th>Warfarin</th>
<th>Dabigatran 150 mg BID</th>
<th>Edoxaban 60 mg QD</th>
<th>Rivaroxaban 15 mg BID X 3 weeks, then 20 mg QD</th>
<th>Apixaban 10 mg BID X 1 week, then 5 mg BID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day 1</td>
<td>Single drug approach</td>
<td>At least 3 mo</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Considerations in Selecting a NOAC for Secondary VTE Prevention

**Patient Characteristics**
- Renal insufficiency
  - CrCl ≥25 to ≤30 mL/min
- PE with elevated biomarkers
- Prior MI
- Cancer, thrombophilia
- Low body weight (<60 kg)

**Patient Comorbidities**
- Warfarin nonadherence
  - Male would stop even if recurrence risk 16% in first y.
  - Female would stop even if recurrence risk 5% in first y.

NOAC Dosing Adjustments in VTE

<table>
<thead>
<tr>
<th>VTE</th>
<th>Dabigatran</th>
<th>Rivaroxaban</th>
<th>Edoxaban</th>
<th>Apixaban</th>
</tr>
</thead>
</table>
| VTE Secondary Prevention
  - Long-term VTE Prophylaxis
    - CrCl<30 mL/min: no dosage recommendations
    - CrCl≥30 mL/min: 2.5 mg BID |
| VTE Secondary Prevention
  - No adjustment required
    - No adjustment required
    - No dosage recommendations |
| Acute VTE Treatment
  - VTE
    - No dosage adjustments if CrCl≥30 mL/min
    - 15 mg BID for 21 d, then 20 mg QD for 6 mo |
    - 10 mg BID for 7 d, then 5 mg bid |
| Acute VTE Treatment
  - No adjustment required
    - No adjustment required |
| Acute VTE Treatment
  - Following parenteral therapy, 50 mg QD when weight >60 kg; 50 mg QD if ≤60 kg |

Secondary Prevention of VTE: Duration of Treatment

- Treat for 3 mo, assess
- Fifteen percent of OAC users discontinue AC for 1 mo |
- Not high bleeding risk
  - Positive D-dimer
    - Stop at 3 mo |
    - Positive D-dimer
      - Restart therapy (indefinite therapy) |
- Male would stop even if recurrence risk 1% in first y.
- Female would stop even if recurrence risk 1% in first y.

NOACs for VTE: Summary

- VTE causes substantial morbidity, mortality
- Multiple options available for initial, long-term AC for treatment, secondary prevention of VTE
- LMWH bridging to warfarin
- NOACs
- Consider long-term anticoagulation therapy in patients at high risk of recurrence
- Risk of anticoagulant-associated bleeding very low among patients with VTE
- Several antidotes under development for NOACs, other anticoagulants

Patient Adherence and Persistence in NVAF: A Role for Pharmacists

- CHA2DS2-VASc score ≥2 = higher stroke risk with NOAC nonadherence
  - Warfarin nonadherence
    - Estimated using Med-eMonitor +20% |
    - Estimated using PDQ 60% |
  - NOAC adherence estimated using PQA’s adherence measure
    - Rivaroxaban 72.7% |
    - Dabigatran 67.2% |
    - Apixaban 69.5% |
  - 1-year OAC persistence in new OAC users
    - VKA 63.6% vs NOAC 79.2% |
    - Warfarin 85% vs apixaban 85.9% |
    - Dabigatran 74.4% |
    - Rivaroxaban 77.4% |
AC Management Resources for Pharmacists

- American Society of Health System Pharmacists Anticoagulation Resource Center
  www.ashp.org/anticoagulation

- ASHP Business Case for Anticoagulation Stewardship Program
  www.google.com/url?url=http://www.ashpadvantage.com/ppmitoolkit/docs/Business_Case_Customizable_Anticoagulation_Management_Stewardship_Program.docx&rct=j&frm=1&q=&esrc=s&sa=U&ved=0CBQQFjAAahUKEwIA9X7iIjHABwIBnsA9XWfQ6w&sig2=iu2QamHMwkjKm5BzdI93lg&usg=AFQjCN0GowWA_Tmr9F_dutX93IWMmEpE

- Anticoagulation Forum
  http://acforum.org/

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