Warfarin Therapy Initiation, Patient Education, and Management

PHMPRAC 554
Pharmacy Skills Lab II
Venous Thromboembolism Lab Tutorial

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Objectives

• Recognize important patient-specific factors that may impact warfarin therapy
• Formulate a plan for warfarin initiation
• Using lay terms, educate patients on warfarin therapy
• Recommend appropriate follow-up and monitoring for patients taking warfarin
• Recognize situations that may require warfarin dose adjustments
Patient Interview

• Important information to be gathered for initial assessment
  – Medication allergies or serious adverse events
  – Current medications (Rx, OTC, and herbals)
  – Medical history
    • Renal insufficiency
    • Anemia
    • Liver disease
    • Past bleeding events
    • CHF
    • Past thromboembolic events
    • History of falls
    • Cancer
Patient Interview

• Important information to be gathered for initial assessment (cont’d)
  – Family history
  – Social history
    • Occupation/recreational habits
    • Alcohol consumption
    • Tobacco use
    • Current diet
  – Patient baseline knowledge/attitude about warfarin
  – Patient self-management skills (e.g. takes own meds)
  – Family support, if needed
  – Patient reliability
  – Access to lab and telephone
Initiating Warfarin Therapy

• Also Consider:
  – Indication for use
  – Planned duration of therapy
  – Target INR
  – Baseline labs
    • INR, Hgb/Hct, Platelets, liver function tests
    • serum creatinine and weight (if initiating LMWH)
What warfarin dose would you recommend?

- AF is a 84yo male (60 kg) recently diagnosed with atrial fibrillation
- PMH
  - Hypertension
  - Hyperlipidemia
  - Diabetes
  - CHF
- Social History
  - Requires a walker for mobility
  - Former cigarette smoker, quit 16 yrs ago
- Family History
  - Noncontributory
- Current Medications
  - Lisinopril 20mg po daily
  - Simvastatin 40mg po daily
  - Metformin 1000mg po BID
  - Carvedilol 12.5 mg BID
  - Furosemide 40 mg daily
- Labs
  - INR 1.0
  - Hgb 13.5 / Hct 42.1
  - Platelets 300
  - ALT 25
Appropriateness of warfarin therapy?

• Thromboembolism Risk Assessment:
  – CHADS2 score
    • CHF (exacerbation in the last 100 days OR ejection fraction $\leq 40\%$)
    • Hypertension (controlled or uncontrolled)
    • Age $> 75$
    • Diabetes
    • Stroke/TIA (2 points)
  – What is AF’s CHADS2 score? Risk?
Appropriateness of warfarin therapy?
Thromboembolism Risk Assessment

**CHA$_2$DS$_2$-VASc score**

<table>
<thead>
<tr>
<th>Factor</th>
<th>Pts</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHF (exacerbation in the last 100 days OR ejection fraction $\leq$ 40%)</td>
<td>1</td>
</tr>
<tr>
<td>Hypertension (controlled or uncontrolled)</td>
<td>1</td>
</tr>
<tr>
<td>Age $\geq$ 75</td>
<td>2</td>
</tr>
<tr>
<td>Diabetes</td>
<td>1</td>
</tr>
<tr>
<td>Stroke/TIA</td>
<td>2</td>
</tr>
<tr>
<td>Vascular Disease</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>

**AHA Atrial Fibrillation Guidelines 2014**

<table>
<thead>
<tr>
<th>CHA$_2$DS$_2$-VASc</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>No therapy</td>
</tr>
<tr>
<td>1</td>
<td>No therapy or oral anticoagulation or aspirin</td>
</tr>
<tr>
<td>$\geq$ 2</td>
<td>Oral anticoagulation</td>
</tr>
</tbody>
</table>

1) What is AF’s CHA$_2$DS$_2$-VASc score?
2) Thromboembolic risk?
3) Should anticoagulation be started?
Starting Dose and Follow Up

• Plan for AF:
  – Dose: initiate warfarin 2.5mg po daily
  – Follow-up:
    • Repeat INR within 2-3 days of starting warfarin
    • Hgb/Hct and platelets every ~6 months
Patient Education

• Baseline knowledge, beliefs, and concerns

• How does warfarin work?
  – Warfarin blocks a part of the body’s clotting system that relies on vitamin K
  – Taking warfarin will make your blood clot slower and prevent *abnormal* blood clots from forming
  – Warfarin does not stop your blood from clotting completely
Patient Education

- Description of tablet
- Dosage regimen instructions / changing doses
- What to do if a dose is missed
- What does INR mean?
- Tell all health care practitioners involved
- Importance of keeping appointments
Patient Education

• What Are Symptoms of Blood Clots?
  – Deep vein thrombosis (DVT)
    • Pain, tenderness, or sudden swelling in one leg or arm
    • Unusual discoloration of your leg or arm
    • The area may be warm to the touch
  – Pulmonary embolism (PE)
    • Difficulty breathing or shortness of breath, chest pain, coughing up blood
Patient Education

• What Are Symptoms of Blood Clots? (cont’d)
  – Stroke/TIA
    • Sudden numbness or weakness on one side of your body – especially the face, arm or leg
    • Difficulty speaking or understanding
    • Sudden trouble seeing in one or both eyes
    • Sudden problems with walking or dizziness
    • Severe headache with no cause
Patient Education

• Common side effects:
  • Increased bruising
  • Bleeding gums (mild)
  • Mild nosebleeds
  • Increased bleeding from nicks or cuts

• Rare side effects:
  • Vomiting blood
  • Coughing up blood
  • Dark brown/red urine
  • Black or bloody stools
  • Any bleeding that lasts longer than 20-30 minutes or is intense
Patient Education

• Things that can affect the INR or risk of bleeding
  – New medications or changes in current medications
  – Illness can affect INR (diarrhea, vomiting, not eating)
  – Fad diets
  – Intermittent NSAIDS
  – Alcohol in excess
  – Certain vitamins or nutritional supplements
Patient Education

• Safety
  – Warnings about trauma, falls, cuts and what to do
  – Keep away from children or pets
  – I.D. card and/or Med-alert tag
  – Emergency phone #
  – Issues concerning pregnancy
Monitoring

• Assess adherence (to warfarin and specific other medications that interfere)
• Assess tolerability / side effects
• Assess improving or worsening disease symptoms
• Inquire about medication changes
• Inquire about lifestyle changes
Monitoring

• Possible Reasons for Subtherapeutic INR
  – Patient non-adherence or confusion
  – Ingesting large amounts of Vitamin K containing foods or vitamins
  – Using wrong warfarin tablet strength
  – Ran out of medication
  – Drug interaction
  – Too soon to see effect from last dosage increase
Monitoring

• Possible Reasons for Supratherapeutic INR
  – Patient nonadherence or confusion
  – Using wrong warfarin tablet strength
  – Drug / diet / herbal interaction
  – Excessive alcohol intake
  – Decompensation of cardiac or hepatic disease
  – Poor nutritional intake
  – Acute illness
Monitoring

- INR Assessment
  - Within target?
  - Dosage adjustment required?
    - No more than 10-15% increase/decrease in total weekly dose
    - Consider omitting doses for SUPRAtherapeutic INR
    - Consider extra doses for SUBtherapeutic INR
    - Consider vitamin K for reversal if necessary

- Determine timing of next follow-up
Back to AF

- AF, an 84 yo male, presents to clinic for f/u after initiation of warfarin at 2.5 mg daily three days ago
- His baseline INR was 1.0
- Today, his INR is at 1.3
Patient Case- AF

• Would you consider changing the warfarin dose? If so, by how much? And why?

• When would you re-check the INR?
Patient Case - KO

• KO a 56yo male presents to clinic for f/u of anticoagulation therapy
• Indication for warfarin: DVT diagnosed February of this year
• Target INR: 2-3
• Duration of therapy: 3 months
• Last assessed: 4 weeks ago
• INR at that time: 2.6
• Plan for warfarin at that time: continue 5 mg daily
Patient Case - KO

- Pt able to correctly state dose: yes
- Missed or extra doses: no
- Medication changes: no
- Changes in health status/disease states: no
- Recent illness: no
- Changes in diet/appetite: no
- Changes in alcohol use: 6 beers/day for the past 2 days (usually 1-2 beers per week)
- S/sx of bleeding: no
- S/sx of clotting: no
- Recent falls: no
- Upcoming surgery/procedure: no
Patient Case - KO

• Today’s INR: 3.9

• What factors might have influenced KO’s INR change?

• Would you consider changing the warfarin dose? If so, by how much?

• When would you re-check the INR?
Patient Case - TJ

• TJ a 52 yo female presents to clinic for f/u of anticoagulation therapy
• Indication for warfarin: St. Jude’s mitral heart valve replacement 08/2001
• Target INR: 2.5-3.5
• Duration of therapy: lifelong
• Last assessed: 4 weeks ago
• INR at that time: 2.8
• Plan for warfarin at that time: continue 7.5mg daily
Patient Case - TJ

• Pt able to correctly state dose: yes
• Missed or extra doses: no
• Medication changes: sulfamethoxazole/trimethoprim (SMX/TMP) x 3 days for urinary tract infection (UTI) which was started two days ago
• Changes in health status/disease states: UTI
• Recent illness: UTI, no diarrhea or vomiting
• Changes in diet/appetite: no
• Changes in alcohol use: none
• S/sx of bleeding: blood in urine
• S/sx of clotting: no
• Recent falls: no
• Upcoming surgery/procedure: no
Patient Case - TJ

• Today’s INR: 4.3

• What factors might have influenced TJ’s INR change?

• Would you consider changing the warfarin dose? If so, by how much?

• When would you re-check the INR?
Patient Case – JB

• JB a 63 yo male presents to clinic for f/u of anticoagulation therapy
• Indication for warfarin: Factor V Leiden with history of lower extremity DVT in 2003
• Target INR: 2.0-3.0
• Duration of therapy: lifelong
• Last assessed: 2 weeks ago
• INR at that time: 1.6 due to unknown etiology; previously therapeutic without frequent dose adjustments
• Plan for warfarin at that time: EXTRA 2 mg x 1, then continue 2 mg TuR and 4 mg all other days of the week. Of note, this is the highest weekly warfarin dose patient has ever been on.
Patient Case - JB

• Pt able to correctly state dose: yes
• Missed or extra doses: no
• Medication changes: no
• Changes in health status/disease states: no
• Recent illness: no
• Changes in diet/appetite: no
• Changes in alcohol use: none
• S/sx of bleeding: no
• S/sx of clotting: no
• Recent falls: no
• Upcoming surgery/procedure: no
Patient Case - JB

• Today’s INR: 1.7

• What factors might have influenced JB’s INR change?

• Would you consider changing the warfarin dose? If so, by how much?

• When would you re-check the INR?
Final Thoughts . . .
THE END!

Please EXIT the tutorial and proceed to take the quiz.