Tanya Vadala, Pharm.D.

MEDICATION SAFETY PHARMACIST

Tanya is an IPRO pharmacist with 20 years of clinical pharmacy, community pharmacy, academia, quality improvement and medication safety experience. Before joining IPRO, she worked at various community pharmacies and taught at Albany College of Pharmacy and Health Sciences in Albany, N.Y. She specializes in Medication Therapy Management (MTM), medication reconciliation, opioids, immunizations, and patient self-care. Her formal teaching experience includes courses in pharmacy practice and clinical experiential teaching.

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Objectives

• Recognize common oral anticoagulant medications
• Distinguish between different oral anticoagulant medications
• Summarize issues that can occur with anticoagulant medications
• Identify ways to decrease clot risk

The content in this presentation was current as of Jan. 29, 2024.
Common Oral Anticoagulation Medications

• Vitamin K antagonist:
  • Warfarin

• Factor Xa inhibitors:
  • Apixaban (Eliquis®)
  • Rivaroxaban (Xarelto®)
  • Edoxaban (Savaysa®)

• Direct thrombin inhibitor:
  • Dabigatran (Pradaxa®)
Warfarin
Warfarin: Box Warning

Box Warning:
Can cause major or fatal bleeding. Perform regular monitoring of the international normalized ratio (INR) on all treated patients. Drugs, dietary changes, and other factors affect INR levels achieved with warfarin therapy. Instruct patients about prevention measures to minimize the risk of bleeding and to report immediately to their health care provider signs and symptoms of bleeding.

*Regular blood testing is needed to prevent adverse outcomes.
Warfarin: Testing

Blood testing methods

• Prothrombin Time (PT): measures how long it takes blood to clot

• International Normalized Ratio (INR): uses PT to measure the body’s ability to form a clot

• Partial Thromboplastin Time (PTT): measures how long it takes blood to clot

• PT/INR is the most commonly used
What Does an Increased/Decreased INR Mean?

- Increased or Higher INR = blood clots more slowly (risk of bleeding)
- Decreased or Lower INR = blot clots more quickly (risk of clotting)
Warfarin: Other Things To Know

• Foods high in vitamin K can cause INR to decrease:
  • Spinach, Broccoli, collard greens, kale, and Brussel sprouts (dark leafy greens)
  • Others?

• Warfarin tablet colors:

<table>
<thead>
<tr>
<th>Dose</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 mg</td>
<td>Pink</td>
</tr>
<tr>
<td>2 mg</td>
<td>Lavender</td>
</tr>
<tr>
<td>2.5 mg</td>
<td>Green</td>
</tr>
<tr>
<td>3 mg</td>
<td>Brown/Tan</td>
</tr>
<tr>
<td>4 mg</td>
<td>Blue</td>
</tr>
<tr>
<td>5 mg</td>
<td>Peach</td>
</tr>
<tr>
<td>6 mg</td>
<td>Teal</td>
</tr>
<tr>
<td>7.5 mg</td>
<td>Yellow</td>
</tr>
<tr>
<td>10 mg</td>
<td>White</td>
</tr>
</tbody>
</table>

Please Let Greg Brown Bring Peaches To Your Wedding
Warfarin: Drug Interactions

Warfarin interacts with many medications

- Consult with a physician and/or pharmacist:
  - When warfarin is added or removed
  - When any medication is added or removed
Factor Xa Inhibitors
Box Warnings: Factor Xa Inhibitors

Apixaban & Rivaroxaban
• Premature discontinuation increases the risk of thrombotic events
• Spinal/Epidural hematomas

Edoxaban
• Same as above
• Reduced efficacy in nonvalvular atrial fibrillation patients with CrCl>95mL/minute
Factor Xa Inhibitors

- **Rivaroxaban (Xarelto®):**
  - Doses ≥ 15 mg must be taken with food

- **Apixaban (Eliquis®) and edoxaban (Savaysa®):**
  - Can be taken without regard to meals

- **Xa Side effects:** Generally well tolerated, but bleeding and clotting can occur

<table>
<thead>
<tr>
<th>Medication</th>
<th>Formulations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apixaban (Eliquis®)</td>
<td>Tablet</td>
</tr>
<tr>
<td>Rivaroxaban (Xarelto®)</td>
<td>Tablet and packet</td>
</tr>
<tr>
<td>Edoxaban (Savaysa®)</td>
<td>Tablet</td>
</tr>
</tbody>
</table>
Direct Thrombin Inhibitor
Box Warnings: Direct Thrombin Inhibitor

Dabigitran
• Thrombotic events
• Spinal/Epidural hematoma
Direct Thrombin Inhibitor

Dabigatran (Pradaxa®):
  - Formulations: capsule and oral packet (pellets)
  - Side effects:
    - Bleeding (mainly GI bleed)
    - Dyspepsia
    - Gastritis-like symptoms
  - Pearls:
    - Swallow capsules or pellets whole or mix pellets with soft food like apple sauce. (can not be administered via NG tube)
    - Discard four months after opening bottle (must remain in manufacturer bottle)
Bleeding Risk

- ISMP considers all anticoagulants as high-risk medications

- Signs of bleeding due to anticoagulation:
  - Bruising
  - Blood in stool
  - Dark and tarry-looking stools
  - Blood in urine
  - Coughing or vomiting up blood (sometimes looks like coffee grounds)
  - Bleeding from gums or nose

https://www.ncbi.nlm.nih.gov/books/NBK519025/
Clot Risk

• **Deep Vein Thrombosis:**
  • Skin warm to touch
  • Redness, pain, or tenderness
  • Swelling

• **Pulmonary Embolism:**
  • Trouble breathing
  • Severe chest pain
  • Coughing blood

https://www.cdc.gov/ncbddd/dvt/infographic-risk.html
Clot Risk (continued)

- **Myocardial Infarction:**
  - Chest pain
  - Left arm pain
  - Trouble breathing
  - Nausea/vomiting or stomach pain (in women)

- **Stroke:**
  - Slurred speech
  - Facial droop
  - Weakness in arms or legs
  - Unilateral numbness or weakness

https://www.cdc.gov/ncbddd/dvt/infographic-risk.html
Venous Thromboembolism (VTE) Risk Factors

**Potential risk factors for venous thromboembolism in long-term care residents**

- Age > 75 years
- Decreased mobility (unable to walk without assistance)
- Previous venous thromboembolism
- Recent hospitalization for surgery or other illness
- Ischemic stroke
- Congestive heart failure
- Chronic obstructive or interstitial lung disease
- Severe inflammatory disease
- Active cancer
- Severe infectious disease

Clot Risk in Nursing Homes

Patients in Nursing homes have a 30x higher rate of DVT and PE than the general population.

Tips to decrease clot risk:

- Moderate activity every day (walking)
- Avoid long periods of staying still
- Weight loss
- Ankle exercises
- Wear compression socks
- Take medications as directed

https://www.stoptheclot.org/learn_more/dvt/
Resources

- https://www.accessdata.fda.gov/drugsatfda_docs/label/2021/214358s000lbl.pdf
- https://www.accessdata.fda.gov/drugsatfda_docs/label/2011/022512s007lbl.pdf
- https://www.stoptheclot.org/learn_more/dvt/
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