What is Anticoagulation?

- Anti = against
- Coagulation = blood clotting
- An anticoagulant is a medication that reduces the blood’s potential to clot
- Anticoagulants are often called “blood-thinners”
Reasons for Anticoagulation Therapy

- Deep Vein Thrombosis (DVT)
- Mechanical Heart Valve Replacement
- Pulmonary Embolus (PE)
- Atrial Fibrillation (Afib)
- Atrial Flutter (Aflutter)
- Myocardial Infarction (MI) or Heart Attack

Reasons for Anticoagulation Therapy

- Cardiomyopathy or Left Ventricular Dysfunction
- Stroke
- Transient Ischemic Attack (TIA)
- Post-operative
About Warfarin (Coumadin®)

- Most commonly used oral anticoagulant
- Stops harmful blood clots from forming
- Partially blocks the re-use of vitamin K in the liver
  - vitamin K is needed to help the blood form clots to prevent bleeding
  - vitamin K is found in green leafy vegetables

About Warfarin (Coumadin®)

- Warfarin tablets
  - numerical imprint of strength
    - 1mg, 2mg, 2.5mg, 3mg, 4mg, 5mg, 6mg, 7.5mg, or 10mg
    - color-coded
    - scored in the middle
- Important to pay attention to any change in size, color or shape of tablets
  - can affect therapeutic dose
About Warfarin (Coumadin®)

• Warfarin therapy monitored by blood test called INR (International Normalized Ratio)
  – MD will prescribe what range INR needs to be
    • INR = 0.9-1.1, without warfarin
    • INR = 2.0-3.0, for most indications
    • INR = 2.5-3.5, for mechanical heart valves and other conditions
    • general guidelines, may have different range according to medical condition or other risk factors

About Warfarin (Coumadin®)

• Warfarin has a “narrow therapeutic range”
• When INR falls within prescribed range, level is “therapeutic”
• When INR falls below prescribed range:
  – INR = 1.5, for example
  – blood is “too thick”, clotting too fast
  – risk for forming blood clots exists
  – warfarin dose needs to be increased
About Warfarin (Coumadin®)

• When INR is above prescribed range:
  – INR = 4.5, for example
  – blood is “too thin”, clotting too slowly
  – higher risk for bleeding
  – warfarin dose needs to be decreased

About Warfarin (Coumadin®)

• The dose of warfarin needed is the one that will keep INR in therapeutic range
  – some people need very large dose of warfarin
  – some people need very small dose of warfarin

• The dose of warfarin will fluctuate with changing INR values
  – dose likely to change with each INR in first month of therapy
  – will change after first month with changes in diet, medications, activity and overall health
About Warfarin (Coumadin®)

• IT IS VERY IMPORTANT TO TAKE WARFARIN AS PRESCRIBED!
  – Make sure you understand exactly how much warfarin you need to take every day until next INR is scheduled
• It is also important to take warfarin at the same time every day
  – preferably in the evening

About Warfarin (Coumadin®)

• The INR will need to be checked
  – 2-3 times in the first week of warfarin therapy
  – to once a week until stable (usually about a month)
• If INR becomes stable quickly, INR needs to be checked less often
• If INR does not become stable, INR will need to be checked more frequently
About Warfarin (Coumadin®)

- When a stable dose of warfarin has been found
  - INR needs to be checked once a month
  - If INR is stable for several consecutive months a 6-week schedule may be considered for INR’s
- It is very important to call for earlier INR appointment if there are changes
  - in diet, medications, activity and overall health

About Warfarin (Coumadin®)

- If a dose of warfarin is missed it can be taken later the same day
- If previous days’ dose was missed
  - DO NOT TAKE A DOUBLE DOSE!
  - Get back on dosing schedule and let healthcare provider know the date of the missed dose with next INR
About Warfarin (Coumadin®)

• If more than 1 or 2 doses are missed
  – call healthcare provider to discuss
  – INR may need to be checked
• You are not likely to have symptoms if INR is too low or too high
• This is why regular testing of INR is so important

Warfarin and Side Effects

• The most common and serious side effect of warfarin therapy is bleeding
  – The risk of bleeding is relatively small when warfarin is taken properly
  – To lower the risk, make sure to have INR levels checked regularly
  – Report any changes in diet, medications, activity and overall health
Warfarin and Side Effects

• Monitor and report any of the following
  – Prolonged or unusual bleeding from cuts
  – Nosebleeds
  – Bleeding from gums when brushing teeth
  – Increased menstrual flow or unexpected vaginal bleeding
  – Bright red, tea-colored, or dark brown urine
  – Bright red or black, tarry stools

Warfarin and Side Effects

• Monitor and report any of the following
  – Prolonged severe and unusual headache or stomachache
  – Unusual weakness, dizziness or changes in vision or speech
  – Coughing or spitting up blood
  – Vomiting bright red or coffee-ground emesis
  – Joint pain or immobility
  – Unusual pain or swelling in extremities
Warfarin and Side Effects

• Any of these symptoms could be significant, but may not be dangerous
• In therapeutic doses warfarin does not cause bleeding, but will make it harder to stop bleeding if an injury occurs
• Primary care physician (PCP) will need to be aware of, and treat any of these side effects

Warfarin and Side Effects

• For minor bleeding
  – nosebleed or bleeding gums that stop within a few minutes
• Call healthcare provider so INR can be checked
• Reporting bleeding symptoms early and having warfarin dose adjusted
  – can prevent INR from increasing and more serious side effects from occurring
Warfarin and Side Effects

• GET TO THE NEAREST EMERGENCY ROOM
  – If you have major bleeding
    • Nosebleed that does not stop after 15-20 minutes
    • Frank blood in stools, or black, tarry stools
    • Vomiting bright red or coffee-ground emesis
  – If you sustain a traumatic injury from a fall or car accident
    • You will need to be checked for internal bleeding

Warfarin and Side Effects

• GET TO THE NEAREST EMERGENCY ROOM
  – If you are exhibiting signs of a stroke or “brain attack”
    • Sudden numbness or weakness of face, arm or leg
    • Difficulty speaking or understanding others
    • Problems seeing clearly
    • Confusion, dizziness, severe drowsiness
    • Loss of coordination
    • Sudden severe headache with no known cause
Warfarin and Side Effects

- **Rash**
  - Please report if develop rash starting warfarin
    - Could be minor
    - Could be allergy to dye in pills

Special Considerations with Warfarin

- **Pregnancy**
  - Report any plans to become pregnant or pregnancies immediately
  - Warfarin is very harmful to the developing fetus
- **Avoid activities that put you at risk for traumatic injury**
- **Exercise caution when using sharp objects**
Special Considerations with Warfarin

• Advisable to wear a Medic-Alert bracelet
  – To notify emergency healthcare personnel you are taking anticoagulants

• Have an updated medication list
  – In wallet or billfold and with you at all times

• Be careful! Use common sense!
  – You are taking a blood thinner and are going to bruise more easily and bleed longer than before you took warfarin

Warfarin and Drug Interactions

• Warfarin has hundreds of drug interactions
  – With prescription, over-the-counter and herbal medicines
  – Not all medications affect everyone the same
  – Initiation of some meds warrant an INR within 2-3 days
  – Initiation or change in others may need INR to be checked within 2 weeks
Warfarin and Drug Interactions

• One of the most preventable causes of an untherapeutic INR
  – Is to inform healthcare provider when making any medication changes, however minor they may seem

• If you need to take a medication that interacts with warfarin
  – You will need more frequent testing of INR and adjustment in dose until INR is stable

Warfarin and Diet

• Warfarin works against vitamin K in diet
  – Vitamin K is important in forming blood clots
  – Foods with the highest amounts of vitamin K are green, leafy vegetables

• Green vegetables are important!
  – Contain folic acid, phytonutrients and fiber
    • All of which help protect your heart and have countless other benefits to body
    • Eat your veggies!
Warfarin and Diet

• The most important thing is to maintain a consistent intake of vitamin K in diet
  – Eat same quantity and quality of green vegetables weekly
  – If you eat more green veggies than usual
    • INR likely to drop, putting you at risk for clots
  – If you eat less green veggies than usual
    • INR can increase, putting you at risk for bleeding
  – If you eat the same amount of green veggies
    • It will help to balance warfarin dose

Warfarin and Diet

• Not all green vegetables have the same amount of vitamin K
  – As a general rule, the greener and leafier it is, the more vitamin K it contains
    • Green beans and carrots are “low” in vitamin K
    • Iceberg lettuce and asparagus are ‘medium’ in vitamin K
    • Spinach and broccoli are ‘high’ in vitamin K

• Vitamin K is also found in
  – Oils, olive and soybean are ‘high’
  – Margarine and mayonnaise are also ‘high’
Warfarin and Dietary Supplements

• Dietary supplements such as Ensure, Boost, Carnation Instant Breakfast, and various protein drinks are ‘high’ in vitamin K
  – If you start a dietary regimen with any of these
    • Be consistent
    • Call healthcare provider, as warfarin dose will likely need to be adjusted

Warfarin and Vitamins

• Multi-vitamins (MVI)
  – Contain vitamin K
  – Call healthcare provider if starting or changing
  – Pay attention to vitamin K content when choosing or switching brands
  – Viactiv MVI and Calcium chews have extremely high amounts of vitamin K

• B Vitamins
  – Have little to no effect on warfarin
Warfarin and Vitamins

- **Vitamin C**
  - Up to 500mg daily has no affect, greater than 500mg daily may effect warfarin dosage
- **Vitamin E**
  - Up to 400 iu daily has no affect, doses greater than that may increase INR
- **Fish oil**
  - Likely to increase INR and require dose adjustment

Warfarin and Alcohol

- Drinking alcohol can affect INR and is not always predictable
- Best not to drink alcohol, but alcoholic beverages in moderation can be safe
- One or two drinks each day
  - 12 oz. Beer = 4 oz. Wine = 1 oz. Liquor
- It is best to be consistent from week to week
Warfarin and Alcohol

• Excessive alcohol intake
  – puts you at significant risk for injury and potential bleeding complications while taking warfarin

• Please call to have INR checked
  – If you make any changes in alcohol intake
  – Either an increase or decrease can affect INR and warfarin dose may need to be adjusted

Warfarin and Exercise

• Physical activity can affect INR levels
  – A change, either increase or decrease may require an adjustment in warfarin dose

• Please contact healthcare provider when making any significant changes in physical activity or exercise program
Warfarin and Medical, Surgical or Dental Procedures

- Contact your healthcare provider any time you need to have a procedure that puts you at risk for bleeding
  - Warfarin may need to be temporarily stopped
  - It may not be safe for you to stop your anticoagulants entirely
    - You may need an alternative method of anticoagulation

Warfarin and Travel

- Travel can often affect INR levels
- Have INR checked before travelling
- If an INR needs to be checked while away, or you will be gone for an extended time
  - Your healthcare provider can help you make arrangements to have it checked while away
- Try to maintain a consistent diet and avoid excessive alcohol intake
Questions?