Clinical Pearls

MEDICATION THERAPY SOLUTIONS, INC.

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warfarin Special Edition

***INSIDE THIS ISSUE*:**

- **Did you know that warfarin was the most commonly implicated medication resulting in hospitalization in the elderly in a recent study? (Budnitz et al. ; NEJM 365;21; 11/24/11)**

REAL Case in our practice-- resident managed with warfarin for DVT since 12/11, had a stable INR of 2.39, started Bactrim for a UTI and within 4 days of starting Bactrim her INR was >12

INR is a lab test that helps monitor how well warfarin is working in a patient. The therapeutic goal is between 2-3.5, depending on the indication. When the patient's INR drops below 2.0 the risk of forming a clot increases and when the INR increases above 3.5 then the patient is at an increase risk of excessive bleeding.

Indications	Target INR
• Venous thrombosis prophylaxis and treatment (Conversion from Lovenox® to warfarin) • Pulmonary embolism treatment • Systemic embolism prevention (AFib, AMI, valvular disease) • Bileaflet mechanical aortic valves • Systemic embolism prevention with tissue heart valves • Systemic embolism prevention with bileaflet mechanical aortic valves	2.5 (2.0 – 3.0)
• Systemic embolism prevention with tilting disk valves • Systemic embolism prevention with bileaflet mechanical mitral valves OR bileaflet mechanical aortic valves and AFib • Antiphospholipid syndrome	3.0 (2.5 – 3.5)
• Caged ball or caged disk valves • Mechanical prosthetic valves w/ additional risk factors: AFib, MI, left atrial enlargement, endocardial damage, low EF • Mechanical prosthetic valves w/ systemic embolism, despite adequate therapy	3.0 (2.5-3.5) ***and*** ASA EC 81mg

FUN! MATCHING

Think you know your warfarin doses? Test your knowledge here! (answers on back)

____ 1. Peach	**a. 1mg**
____ 2. White	**b. 2mg**
____ 3. Pink	**c. 2.5mg**
____ 4. Yellow	**d. 3mg**
____ 5. Tan	**e. 4mg**
____ 6. Green	**f. 5mg**
____ 7. Teal	**g. 6mg**
____ 8. Purple	**h. 7.5mg**
____ 9. Blue	**i. 10mg**

Interactions

- ***Drugs* that can <u>increase</u> the effect of warfarin:** amiodarone, metronidazole, fluconazole, sulfamethoxazole/trimethoprim (Bactrim®), fluoroquinolones (levoflaxacin, ciprofloxacin), erythromycin
- ***Drugs* that can <u>decrease</u> the effect of warfarin:** rifampin, phenytoin (chronic therapy), carbamazapine, bile acid sequestrants
- ***Foods* that may <u>decrease</u> the effect of warfarin:** Any type of food containing Vitamin K. Patients who are on warfarin should keep a consistent diet in regards to the amount of Vitamin K they consume, so as to not create a fluctuation in the effect of warfarin.

Spotlight: When to consider use of one of the New Oral Anticoagulants?

Not everyone is suitable to be on warfarin therapy. Patients who are predisposed to falls, those who are not adherent to therapy, and those whose INR cannot be maintained within therapeutic range are all candidates for one of the new anticoagulants on the market. Options include Xarelto® (Rivaroxaban) and Pradaxa® (Dabigatran).

Anticoagulant Best Practice Tips:

- Keep a **<u>warfarin dose/INR flow sheet</u>** to keep track of trends of INRs & doses to help with communication to physicians.
- If possible, ***<u>do not</u>*** split ***doses or strengths on different days of the week*** (will **REDUCE** risk of medication errors)**.**
- Include **stop dates for heparins if converting/bridging to warfarin and lengths of therapy for all anticoagulants** on the physician's orders.
- Initially, residents will need up to **twice weekly monitoring of INRs until within target goals**. Once stable, INR should be checked at a **minimum of once every 4 weeks in stable patients** (potentially include a standing order or protocol for weekly/monthly INRs).
- If a patient is to be added on an **antibiotic**, inform the doctor of the **strength of warfarin** the patient is taking and the **last INR result**. This can be written on the culture and sensitivity report. That way the doctor can have both vital pieces of information on one sheet before making clinical decisions and avoid what happened to our case resident!
- If the patient is due for any **surgery or dental appointment**, please let the physician/dentist know the **warfarin dose and latest INR** a few days before their appointment.

1.f, 2.i, 3.a, 4.h, 5.d, 6.c, 7.g, 8.b, 9.e