WARFARIN (COUMADIN®) INFORMATION CARD

RECOMMENDED THERAPEUTIC RANGE FOR ORAL ANTICOAGULANT THERAPY

Indication	Target INR	Range	Duration of Therapy
Deep venous thrombosis (DVT) prophylaxis after hip or knee arthroplasty, hip fracture surgery	2.5	2-3	10 days (Up to 28-35 days post surgery, THR (1A), HFS (1C+))
Treatment of VTE (DVT/PE)	2.5	2-3	3 months to lifetime
Atrial fibrillation • Primary prevention for patients with risk factors (prior ischemic stroke or transient ischemic attack, age>75, impaired left ventricular systolic function, hypertension, diabetes mellitus) • Secondary prevention for patients with cardioembolic stroke	2.5	2-3	Variable
Myocardial infarction** • High risk, large anterior MI (with aspirin ≤ 100 mg/day)	2.5	2-3	3 months
Antiphospholipid Syndrome • No additional risk factors or no lack of response • Recurrent thromboembolic events with therapeutic INR or additional risk factors	2.5 3	2-3 2.5-3.5	Lifetime
Bioprosthetic AVR or MVR (tissue heart valves)	2.5	2-3	At least 3 months
Mechanical aortic valve patients • Normal left atrium and in sinus rhythm • Modern aortic valve (St. Jude Medical bileaflet, carbomedics bileaflet, Medtronic Hall tilting disk)	2.5	2-3	Lifetime
Mechanical prosthetic valve • Modern aortic valve with atrial fibrillation or other additional risk factors (atrial fibrillation, left atrium enlargement, low left ventricular ejection fraction, myocardial infarction, endocardial damage) for thromboembolism • First generation aortic valve (i.e. caged ball or disk) • All mitral valves with or without risk factors for thromboembolism*	3	2.5-3.5	Lifetime

* Not inclusive, additional INR target ranges may be recommended by the primary prescriber

** Higher INR target ranges (i.e. 3-4) have been studied and may be appropriate for some patient populations

(Chest 2004; 126)

RECOMMENDATIONS FOR MANAGING ELEVATED INRs OR BLEEDING IN PATIENTS RECEIVING WARFARIN (CHEST 2004)

Condition	Description
INR above therapeutic range, but < 5; no significant bleeding	Lower warfarin dose or omit dose, monitor more frequently, and resume at a lower dose when INR therapeutic; if only minimally above therapeutic range, no dose reduction may be required (Grade 2C)
INR ≥ 5 but < 9; no significant bleeding	Omit next one or two warfarin doses, monitor more frequently and resume at lower dose when INR in therapeutic range. Alternatively, omit dose and give vitamin K (≤ 5 mg orally), particularly if at increased risk of bleeding. If more rapid reversal is required because the patient requires urgent surgery, vitamin K (2 to 4 mg orally) can be given with the expectation that a reduction of the INR will occur in 24 hours. If the INR is still high, additional vitamin K (1 to 2 mg orally) can be given (Grade 2C)
INR ≥ 9;no significant bleeding	Hold warfarin therapy and give higher dose of vitamin K (5-10 mg orally) with the expectation that the INR will be reduced substantially in 24-48 hours. Monitor more frequently and use additional vitamin K if necessary. Resume therapy at lower dose when INR therapeutic (Grade 2C)
Serious bleeding at any elevation of INR	Hold warfarin therapy and give vitamin K (10 mg by slow IV infusion), supplemented with fresh plasma or prothrombin complex concentrate, depending on the urgency of the situation; recombinant factor VIIa may be considered as alternative to prothrombin complex concentrate; vitamin K can be repeated every 12 hours (Grade 1C)
Life-threatening bleeding	Hold warfarin therapy and give prothrombin complex concentrate supplemented with vitamin K (10 mg by slow IV infusion); recombinant factor VIIa may be considered as alternative to prothrombin complex concentrate; repeat if necessary, depending on INR (Grade 1C)

* Vitamin K (Mephyton) is available as 5 mg tablets. For doses which can not be obtained with the tablets, the vitamin K injectable solution can be given PO

** SC route may produce unpredictable absorption therefore the PO route is preferred due to faster absorption and more predictable effectiveness

*** IV route may produce anaphylactic reaction

(Chest 2004;126: 204S – 233S)

REPRESENTATIVE DRUG AND FOOD INTERACTIONS WITH WARFARIN*

Level of Evidence	Potentiation of anticoagulation	Inhibition of anticoagulation
I	Alcohol (if concomitant liver disease), amiodarone, anabolic steroids, cimetidine, clofibrate, cotrimoxazole, erythromycin, fluconazole, isoniazid (600 mg daily), metronidazole, miconazole, omeprazole, phenylbutazone, piroxicam, propafenone, propranolol, sulfinpyrazone	Barbiturates, carbamazepine, chlordiazepoxide, cholestyramine, griseofulvin, nafcillin, rifampin, sucralfate, high vitamin K content foods/enteral feeds, large amounts of avocado
II	Acetaminophen, chloral hydrate, ciprofloxacin, dextropropoxyphene, disulfiram, itraconazole, quinidine, phenytoin, tamoxifen, tetracycline, flu vaccine	Dicloxacillin
III	Acetylsalicylic acid, disopyramide, fluorouracil, ifosphamide, ketoprofen, lovastatin, metozalone, moricizine, nalidixic acid, norfloxacin, ofloxacin, propoxyphene, sulindac, tolmetin, topical salicylates	Azathioprine, cyclosporine, etretinate, trazodone
IV	Cefamandole, cefazolin, gemfibrozil, heparin, indomethacin, sulfisoxazole	

* For a more complete listing and its potential impact on the patient's INR, please contact your pharmacist

(Chest 2004;126: 204S – 233S)

GENERAL STANDARDS FOR THE INITIATION AND MAINTENANCE OF WARFARIN (COUMADIN®) THERAPY

Initiation of warfarin (Coumadin®) 5 mg nomogram		
Day	**INR**	**Dosage**
1		5 mg
2	< 1.5 1.5-1.9 2.0-2.5 > 2.5	5 mg 2.5 mg 1-2.5 mg 0 mg
3	< 1.5 1.5-1.9 2.0-2.5 2.5-3.0 > 3.0	5-10 mg 2.5-5 mg 0-2.5 mg 0-2.5 mg 0 mg
4	< 1.5 1.5-1.9 2.0-3.0 > 3.0	10 mg 5-7.5 mg 0-5 mg 0 mg
5	< 1.5 1.5-1.9 2.0-3.0 > 3.0	10 mg 7.5-10 mg 0-5 mg 0 mg
6	< 1.5 1.5-1.9 2.0-3.0 > 3.0	7.5-12.5 mg 5-10 mg 0-7.5 mg 0 mg

Maintenance of warfarin (Coumadin®) Based on a therapeutic INR 2.0 - 3.0	
INR	**Weekly dose change**
< 1.1	Consider reinitiation
1.1-2.0	Consider increasing weekly dose by 10-20%
2.0-3.0	Maintain same dose
3.0-3.9	Consider decreasing weekly dose by 10-20%
> 4.0	Consider holding a dose and decreasing weekly dose by 20%

Points to Remember in Initiating Therapy

- Check INR at least 4 times during the first week of therapy
- User lower initial dose (2.5-5 mg) if: Age > 75, weight < 60 kg, interacting medication known to potentiate warfarin, hepatic dysfunction, severe heart failure, renal dysfunction, hypoproteinemia, impaired nutritional intake, and increased baseline INR (i.e., >1.4)
- Use higher initial dose (5-10 mg) if: Younger patients, interacting medications known to diminish warfarin effects, and a diet rich in Vitamin K

Ann Intern Med 1992;116(11):901-904
Ann Intern Med 1997;127(4):333
J Clin Pathol 2002;55:845-849

Points to Remember in Maintenance Therapy

- If patient is on outpatient warfarin therapy, use the home dosage as a guide when continuing warfarin therapy in the hospital
- Monitor INR for medication administration, changes in interacting drugs, liver function changes, cardiac function changes, and changes in diet
- Once on therapy for > 1 week, dose modifications between 5 to 20% are recommended. Larger changes, such as changing the weekly dose by one third can overcorrect an abnormally high or low INR. Recheck an INR within 4-6 days after adjustment for abnormal INR

Am J Med 2000;109:481-488
Circulation. 2003; 107:1692-1711