

Warfarin (Coumadin®, Jantoven®) Considerations for Use*

US/FDA Approved Indication: Stroke Prevention in Atrial Fibrillation

Black Box Warning*	May cause fatal or major bleeding. Monitor INR regularly. Drugs, diet, and other factors affect INR. Instruct patients about prevention measures to minimize bleeding risk and to report signs and symptoms of bleeding.
Mechanism of Action	Inhibits vitamin K-dependent coagulation factors II, VII, IX, X and biologic anticoagulant proteins C and S.
Dosing[†]	<p><u>Adult:</u></p> <ul style="list-style-type: none"> • Individualize the dose; adjust dose based on INR • Target INR = 2.5, 2.0 to 3.0. (with mechanical valve, target INR > 2.5) • Asian patients may require lower initial and maintenance doses. • Consider lower initial dose if genetic variation in CYP2C9 and VKORC1 enzymes is known <p><u>Elderly:</u> Patients ≥ 60 years may have greater than expected INR response; may need lower doses.</p> <p><u>Hepatic Impairment:</u> Use cautiously. Patients may have increased response to warfarin through impaired synthesis of clotting factors and decreased metabolism of warfarin.</p> <p><u>Renal Impairment:</u> No adjustment required</p>
Contraindications	<ul style="list-style-type: none"> • Pregnancy, except with mechanical heart valves (weigh risk versus benefit) • hemorrhagic tendencies or blood dyscrasias • recent or contemplated surgery of central nervous system, eye, or traumatic surgery resulting in large open surfaces • bleeding tendencies associated with active ulceration or overt bleeding • threatened abortion, eclampsia, or preeclampsia • unsupervised patients with high risk for noncompliance • spinal puncture or diagnostic or therapeutic procedure with risk of uncontrollable bleeding • regional or lumbar block anesthesia • malignant hypertension
Major Side Effects	Hemorrhagic event, tissue necrosis, systemic microemboli or cholesterol microemboli
Reversal	<p>Treatment of excessive anticoagulation is based on the level of the INR, the presence or absence of bleeding, and clinical circumstances.</p> <p>Reversal of warfarin anticoagulation may be obtained by discontinuing warfarin and, if necessary, by administration of oral or parenteral vitamin K1 (phytonidione).</p> <ul style="list-style-type: none"> • With INR 4.5 to 10 and without bleeding, the routine use of vitamin K is not recommended.⁴ • With INR > 10.0 and without bleeding, oral vitamin K is recommended.⁴ • With major bleeding, rapidly reverse with prothrombin complex concentrate (PCC) rather than with plasma. In addition, give vitamin K 5 to 10 mg IV slowly.⁴

Dosage forms and Strengths	<p><u>PO</u>: 1, 2, 2.5, 3, 4, 5, 6, 7.5, 10 mg</p> <p><u>IV</u>: 5 mg powder for reconstitution</p>
Special Notes	<p>Has many potential drug interactions.</p> <ul style="list-style-type: none"> • Consult prescribing information of all concomitant medications for complete information about interactions. • Inhibitors and inducers of CYP2C9, 1A2, or 3A4 may change warfarin exposure. • Concomitant use of other anticoagulants, antiplatelet agents, nonsteroidal anti-inflammatory agents, or serotonin reuptake inhibitors, may increase bleeding risk. • Closely monitor INR when starting or stopping an antibiotic or antifungal medication. • Some herbal or botanical products may increase/decrease INR. <p>Monthly to 12-week INR monitoring for patients is recommended for patients who have been on a stable warfarin dose and have an INR within therapeutic range.</p> <p>Previously stabilized warfarin patients often have elevated INRs when admitted with decompensated heart failure. This often requires holding or reducing warfarin dose by ~50% for 1-2 days after admission, but as they diurese and improve, they often require their previous warfarin doses.</p> <p>May take 3 to 5 days to reach therapeutic INR. Most patients can begin warfarin at the same time as heparin or low molecular weight heparin.</p> <p>Continue heparin/LMWH treatment for thrombosis until the INR has been in the therapeutic range for at least 2 days</p>
Counseling	<p>Get INR checked regularly as advised by your healthcare provider.</p> <p>The amount of vitamin K in food may affect therapy with warfarin. Eat a heart-healthy, balanced diet maintaining a consistent amount of vitamin K.</p> <p>Avoid binge drinking or excessive alcohol consumption.</p> <p>Do not take while pregnant.</p> <p>Consult healthcare provider prior to using new drug (prescription, OTC, herbal).</p> <p>Report signs and symptoms of bleeding (e.g., unexpected bleeding or bleeding that lasts a long time; red or black, tarry stool; pink or brown urine; unusual bruising; coughing up blood; vomiting blood or vomit that looks like coffee grounds; unexplained pain, swelling, or joint pain; unusual headaches, dizziness, or weakness; recurring nose bleeds)</p> <p>Carry identification stating warfarin is being taken.</p> <p>Tell your healthcare professional if you are pregnant or plan to become pregnant or are breastfeeding or plan to breastfeed during treatment.</p>

*Refer to prescribing information for more complete information.

†Dosages given in the table may differ from those recommended by the manufacturers.

Sources:

1. American College of Cardiology (ACC), American Heart Association (AHA), and the European Society of Cardiology (ESC). *ACC/AHA/ESC 2006 Guidelines for the Management of Patients With Atrial Fibrillation*. Washington, DC: American College of Cardiology.
2. Heart Rhythm Society. *AF360 Pocket Guide: Practical Rate and Rhythm Management of Atrial Fibrillation*. 2010, Washington, DC: Heart Rhythm Society.
3. Coumadin® Prescribing information, 10/4/11.
4. Chest Supplement, Antithrombotic Therapy and Prevention of Thrombosis, 9th edition, American College of Chest Physicians.