



# USE OF VITAMIN K ANTAGONIST ORAL ANTICOAGULANTS IN PATIENTS WITH NON VALVULAR ATRIAL FIBRILLATION.

Ashik. S.S<sup>1</sup>, Neethu Wilson<sup>1</sup>, Ajina Kamal<sup>1</sup>, E Sam Jeevakumar<sup>2</sup>, Dr. Prasobh. G. R<sup>3</sup>

<sup>1</sup>Pharm D Student, *Sree Krishna College of Pharmacy and Research center, Parassala, Thiruvananthapuram*

<sup>2</sup>Professor, *Department of pharmacy practice, Sree Krishna College of Pharmacy and Research center, Parassala, Thiruvananthapuram*

<sup>3</sup>Principal, *Sree Krishna College of Pharmacy and Research center, Parassala, Thiruvananthapuram*

**ABSTRACT:** Anticoagulant therapy is one of the most important methods of preventing strokes in people with atrial fibrillation (AF). Atrial fibrillation is nothing more than an irregular heartbeat that can lead to blood clotting, stroke, heart failure, and even other heart complications. AF clinical guidelines consistently recommend the long-term oral use of warfarin for the treatment of valvular atrial fibrillation (VAF). However, the risks of blood clots and stroke are associated with different types of non-valvular atrial fibrillation (NVAf).

**KEYWORDS:** Warfarin, atrial fibrillation, anticoagulants, vitamin K, clotting factors, CHA2DS2-Vasc, HAS-BLED, stroke, bleeding risk.

**INTRODUCTION:**

**ATRIAL FIBRILLATION:**

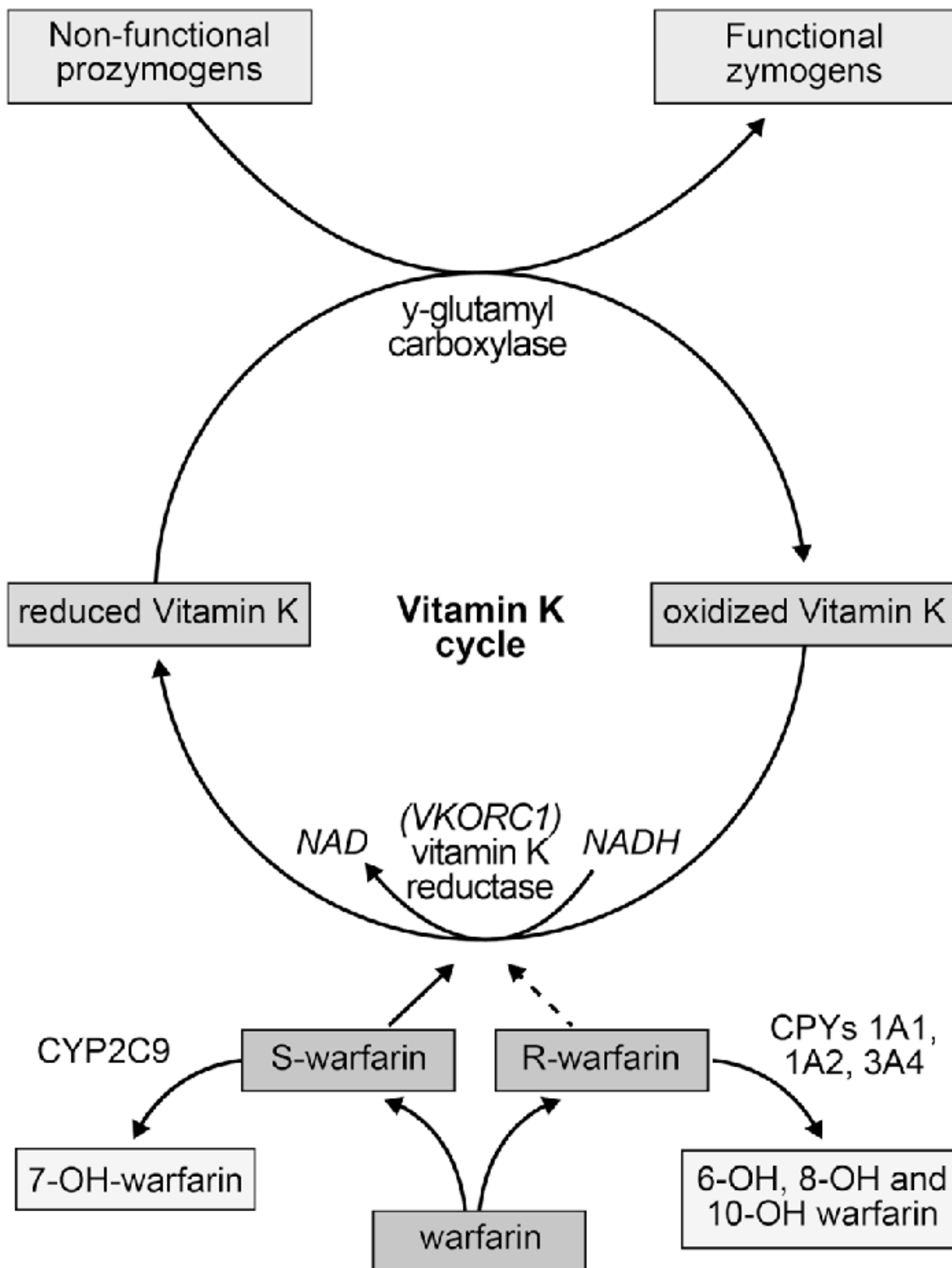
The anticoagulation remedy is one of the maximum vital techniques for stopping stroke in people laid low with atrial traumatic inflammation or atrial fibrillation (AF). Atrial traumatic inflammation is not anything however an abnormal heartbeat which could cause clotting of blood, stroke, coronary heart failure, and additionally different coronary heart-associated complications. Clinical recommendations on AF constantly advise the long-time period oral use of warfarin to deal with valvular atrial traumatic inflammation (VAF). However, the dangers of blood clots and stroke are related to extraordinary forms of non-valvular atrial traumatic inflammation (NVAf). Atrial traumatic inflammation (AF) is one of the not unusual place forms of arrhythmia. There are approximately 335 million people with atrial fibrillation worldwide, with an excess incidence rate of 2.9%. With converting life and a getting old international population, the prevalence of AF is growing rapidly. AF incidence is set to 0.1% for people below the age of fifty-five years old, extra than 5% in humans over the age of sixty-five years old, and extra than 9% in humans over the age of eighty years old. The predominant negative consequences of AF are thrombosis and embolism. Warfarin and antiplatelet dealers require dosage adjustments that can lessen the hazard of stroke with the aid of using about 60 % and 20 %, respectively, in sufferers with AF. Generally, oral anticoagulation is desired in sufferers with a CHA2DS2-Vasc rating  $\geq 2$ , and no anticoagulation in sufferers with a rating of 0. In sufferers with a CHA2DS2-Vasc rating of 1, anticoagulation needs to be individualized because the hazard of stroke is low. Patients aged > sixty-five years, mainly women, are at excessive hazard of ischaemic stroke. In those people, anticoagulation reduces the fee of mortality. The hazard of bleeding may be assessed with the aid of using schemes consisting of the ATRIA

and HEMORR2HAGES, HAS-BLED scoring systems. A HAS-BLED rating  $\geq$ three indicates 'excessive hazard'. New oral anticoagulants at the moment are basically endorsed for nonvalvular AF as an ability opportunity to warfarin. Nonsteroidal anti-inflammatory tablets might also additionally grow the hazard of both extreme bleeding and thromboembolism in anticoagulated sufferers with Atrial traumatic inflammation.

## WARFARIN:

Warfarin is the maximum broadly used oral anticoagulant drug, which inhibits the clotting of blood. The mechanism with the aid of using which warfarin paintings is it prevents the formation of blood clots with the aid of using lowering the manufacturing of clotting elements consisting of issues II, VII, IX, X, and the anticoagulant proteins C and S, all of which are found in the liver. The quantities of nutrition K decide the manufacturing of clotting elements. Warfarin declines the manufacturing of clotting elements as it antagonizes vitamin K. Blood clots can arise withinside the veins of the decreased extremities and are termed deep venous thrombosis (DVT), regularly after intervals of immobility. These clots can break and find themselves next to the blood vessels of the lungs which results in pulmonary embolism and might motive chest pain, shortness of breath, or even life-threatening shocks. Blood clots can arise withinside the atria of the coronary heart throughout atrial traumatic inflammation and round synthetic coronary heart valves. These clots additionally may be damaged off and obstruct blood vessels withinside the brain, inflicting an embolic stroke with paralysis. Warfarin is important in preventing the formation of blood clots, preventing the extension of clots already formed, and minimizing the risk of blood clot embolization to other vital organs such as the lungs and brain. Warfarin is effective in reducing the rate of stroke and safe to use in the treatment of atrial fibrillation. Six randomized clinical trials have demonstrated its effectiveness for the primary prevention of stroke with a two-thirds reduction in the risk of stroke. A similar risk reduction has also been shown for secondary prevention. The use of warfarin has also been demonstrated to be cost-effective, especially for those at moderate to high risk. The use of warfarin for stroke prevention is part of standard recommendations for the management of patients with atrial fibrillation. It is estimated that tens of thousands of strokes could be prevented if these guidelines were implemented in clinical practice.





#### INDICATIONS:

- Atrial fibrillation.
- Deep vein thrombosis.
- Prosthetic heart valves.
- Pulmonary embolism.
- Ischemic stroke.

**ADVERSE EFFECTS:** The primary aspect impact of warfarin is bleeding. Administration of warfarin can also additionally have a problem preventing the bleeding from a reduction at the hand or a nosebleed. More-extreme bleeding can be in the body (internal).

- Severe bleeding, which includes heavier than typical menstrual bleeding
- Red or brown urine
- Black or bloody stool
- Severe headache or bellyache
- Joint ache, discomfort, or swelling, mainly after an injury
- Vomiting of blood or cloth that seems like espresso grounds
- Coughing up blood
- Bruising that develops without a remembered injury
- Dizziness or weakness
- Vision adjustments
- Head injury, even without bleeding Rarely, warfarin can motive the demise of pores and skin tissue (necrosis). This hassle takes place within some days of beginning warfarin treatment. Seek instantaneously hospital treatment in case you observe sores, adjustments in pores and skin color or temperature, or intense ache in your pores and skin. Talk to your fitness care issuer approximately those much less extreme aspect effects.
- Bleeding from the gums after toothbrushing.
- Bleeding between periods.
- Diarrhea, vomiting, or lack of ability to consume for extra than 24 hours.
- Fever

#### DOSE:

The adult dose is calculated after noticing the PT-INR value. The normal dose ranges from 1 to 5mg/day.

#### DRUG INTERACTIONS:

- Drugs such as anticoagulants
- Antiplatelets
- Antidepressants
- Nonsteroidal anti-inflammatory drugs
- Some antibiotics, antifungals.
- Herbal products such as garlic, ginkgo Biloba, coenzyme Q10, ginseng, st. Jhon's wort.

**CONTRAINDICATIONS:**

- High blood pressure
- Heart disease
- Low blood count
- Stroke
- Trauma
- Kidney problems
- Pregnant women
- Women who are breastfeeding
- Children aged below 18 years old.

**CONCLUSIONS:**

Warfarin anticoagulation with atrial traumatic inflammation, even amongst “ideal” candidates, seems dramatically underutilized. In addition, among that prescribed warfarin, sufferers are frequently undertreated. Increased warfarin use amongst sufferers with atrial traumatic inflammation represents a superb possibility for stroke prevention withinside the elderly.

**REFERENCES**

1. Bashore TM, Granger CB, Hranitzky P. Heart disease. In: McPhee SJ, Papadakis MA, Tierney LM Jr, editors. Current medical diagnosis & treatment. 47th ed. New York: McGraw Hill Medical; 2008. pp. 280–369. Chapter 10.
2. Canadian Cardiovascular Society. Canadian Cardiovascular Society Consensus Conference 2004: atrial fibrillation [Internet]. Ottawa: The Society; 2004. [cited 2011 Apr 26]. Available from: [http://www.ccs.ca/download/consensus\\_conference/consensus\\_conference\\_archives/2004\\_Atrial\\_Fib\\_full.pdf](http://www.ccs.ca/download/consensus_conference/consensus_conference_archives/2004_Atrial_Fib_full.pdf).
3. Health Canada. Drug product database online query [Internet]. Ottawa: Health Canada, Therapeutic Products Directorate; 2009. [cited 2011 Apr 25]. Available from: <http://webprod.hc-sc.gc.ca/dpd-bdpp/index-eng.jsp>.
4. Singer DE, Albers GW, Dalen JE, Fang MC, Go AS, Halperin JL, et al. Antithrombotic therapy in atrial fibrillation: American College of Chest Physicians evidence-based clinical practice guidelines (8th edition). Chest [Internet]. Jun, 2008. [cited 2011 May 17]. pp. 546S–592S. Available from: [http://chestjournal.chestpubs.org/content/133/6\\_suppl/546S.full.pdf+html](http://chestjournal.chestpubs.org/content/133/6_suppl/546S.full.pdf+html). [PubMed]
5. Lee S, Han J, Park RW, Kim GJ, Rim JH, Cho J, Lee KH, Lee J, Kim S, Kim JH. Development of a Controlled Vocabulary-Based Adverse Drug Reaction Signal Dictionary for Multicenter Electronic Health Record-Based Pharmacovigilance. Drug Saf. 2019 May;42(5):657-670. [PubMed]
6. Chokesuwattanaskul R, Thongprayoon C, Bathini T, Torres-Ortiz A, O'Corragain OA, Watthanasuntorn K, Lertjitbanjong P, Sharma K, Prechawat S, Ungprasert P, Kröner PT, Wijarnpreecha K, Cheungpasitporn W. Efficacy and safety of anticoagulation for atrial fibrillation in patients with cirrhosis: A systematic review and meta-analysis. Dig Liver Dis. 2019 Apr;51(4):489-495. [PubMed]
7. Pourdeyhimi N, Bullard Z. Warfarin-induced skin necrosis. Hosp Pharm. 2014 Dec;49(11):1044-8. [PMC free article] [PubMed]
8. Abutaki FH, Alfaraj D, Alshahrani A, Elsharkawy T. Warfarin-Induced Calciphylaxis in a COVID-19 Patient. Cureus. 2020 Dec 24;12(12):e12249. [PMC free article] [PubMed]

9. Trujillo TC, Dobesh PP, Crossley GH, Finks SW. Contemporary Management of Direct Oral Anticoagulants During Cardioversion and Ablation for Nonvalvular Atrial Fibrillation. *Pharmacotherapy*. 2019 Jan;39(1):94-108. [[PubMed](#)]
10. Ansell J, Hollowell J, Pengo V, Martinez-Brotons F, Caro J, Drouet L. Descriptive analysis of the process and quality of oral anticoagulation management in real-life practice in patients with chronic non-valvular atrial fibrillation: the international study of anticoagulation management (ISAM). *J Thromb Thrombolysis*. 2007 Apr;23(2):83-91. [[PubMed](#)]
11. WarfarinDosing.org [Internet]. Saint Louis (MO): Washington University in St. Louis; 2011. [cited 2011 Aug 24]. Available from: <http://www.warfarindosing.org/Source/Home.aspx>.
12. Dawn AC anticoagulation software for warfarin and coumadin clinic management [Internet]. Milnthorpe (UK): 4S Information Systems; 2010. [cited 2011 Aug 24]. Available from: <http://www.4s-dawn.com/dawnac/index.htm>.
13. Wild D, Murray M, Donatti C. Patient perspectives on taking vitamin K antagonists: a qualitative study in the UK, USA and Spain. *Expert Rev Pharmacoecon Outcomes Res*. 2009 Oct;9(5):467-474. [[PubMed](#)]
14. Lip GY, Agnelli G, Thach AA, Knight E, Rost D, Tangelder MJ. Oral anticoagulation in atrial fibrillation: a pan-European patient survey. *Eur J Intern Med*. 2007 May;18(3):202-208. [[PubMed](#)]
15. Sharp CR, deLaforcade AM, Koenigshof AM, Lynch AM, Thomason JM. Consensus on the Rational Use of Antithrombotics in Veterinary Critical Care (CURATIVE): Domain 4-Refining and monitoring antithrombotic therapies. *J Vet Emerg Crit Care (San Antonio)*. 2019 Jan;29(1):75-87. [[PubMed](#)]
16. Pradhan AA, Levine MA. Warfarin use in atrial fibrillation: a random sample survey of family physician beliefs and preferences. *Can J Clin Pharmacol*. 2002;9(4):199-202. [[PubMed](#)]
17. Gattellari M, Worthington J, Zwar N, Middleton S. Barriers to the use of anticoagulation for nonvalvular atrial fibrillation: a representative survey of Australian family physicians. *Stroke* [Internet]. Jan, 2008. [cited 2011 Jul 11]. pp. 227-230. Available from: <http://stroke.ahajournals.org/content/39/1/227.full.pdf+html>. [[PubMed](#)]
18. Deplanque D, Leys D, Parnetti L, Schmidt R, Ferro J, de Reuck J, et al. Stroke prevention and atrial fibrillation: reasons leading to an inappropriate management. Main results of the SAFE II study. *Br J Clin Pharmacol* [Internet]. Jun, 2004. [cited 2011 Jul 28]. pp. 798-806. Available from: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1884529>. [[PMC free article](#)] [[PubMed](#)]
19. Pugh D, Pugh J, Mead GE. Attitudes of physicians regarding anticoagulation for atrial fibrillation: a systematic review. *Age Ageing*. 2011 Nov;40(6):675-683. [[PubMed](#)]
20. Bajorek BV, Ogle SJ, Duguid MJ, Shenfield GM, Krass I. Management of warfarin in atrial fibrillation: views of health professionals, older patients and their carers. *Med J Aust* [Internet]. Feb 19, 2007. [cited 2011 Jul 8]. pp. 175-180. Available from: [https://www.mja.com.au/sites/default/files/issues/186\\_04\\_190207/baj10154\\_fm.pdf](https://www.mja.com.au/sites/default/files/issues/186_04_190207/baj10154_fm.pdf). [[PubMed](#)]
21. Doliner B, Jaller JA, Lopez AJ, Lev-Tov H. Treatments to prevent primary venous ulceration after deep venous thrombosis. *J Vasc Surg Venous Lymphat Disord*. 2019 Mar;7(2):260-271.e1. [[PubMed](#)]
22. Mckenzie JA, Wilson-Clarke C, Prout J, Campbell J, Douglas RD, Gossell-Williams M. Improving warfarin therapy through implementation of a hospital-based pharmacist managed clinic in Jamaica. *Pharm Pract (Granada)*. 2018 Oct-Dec;16(4):1214. [[PMC free article](#)] [[PubMed](#)]
23. Tan CSS, Lee SWH. Warfarin and food, herbal or dietary supplement interactions: A systematic review. *Br J Clin Pharmacol*. 2021 Feb;87(2):352-374. [[PubMed](#)]
24. Clark NP. Role of the anticoagulant monitoring service in 2018: beyond warfarin. *Hematology Am Soc Hematol Educ Program*. 2018 Nov 30;2018(1):348-352. [[PMC free article](#)] [[PubMed](#)]