



Anticoagulation Management with Warfarin

Ms Nancy Yong, Senior Pharmacist
National University Hospital

Direct Access Hotlines

Alexandra Hospital

Tel: 6379 3878*
Fax: 6379 5348

National University Hospital

Tel: 6772 2000*
Fax: 6773 4913

Tan Tock Seng Hospital

Tel: 9666 6698*
Fax: 6357 7011

Institute of Mental Health

Tel: 6389 2348
Fax: 6385 1075

National Skin Centre

Tel: 6350 6600
Fax: 6350 6682

*24-hour service

Oral anticoagulation therapy with warfarin is effective in preventing and treating thromboembolic events. However, the narrow therapeutic index of warfarin, its unpredictable pharmacokinetics and pharmacodynamics which are affected by drug, herb and food interactions are major impediments to initiation of therapy.

Atrial fibrillation is the most common significant cardiac arrhythmia and it increases the overall risk of stroke five-fold. As the prevalence of atrial fibrillation increases with age, the number of patients who may benefit from anticoagulation is expected to increase as the population in Singapore ages.

Regular coagulation monitoring is important in the management of warfarin therapy. Optimisation of the International Normalised Ratio (INR) is essential as the risk of bleeds increases substantially at INR above five. Conversely, there is a significant risk of thromboembolism as INR values decrease below 1.7. The usual INR target for most conditions is between two and three, while patients with prosthetic heart valves in the mitral position will require a higher range of between 2.5 and 3.5.

Outpatient Anticoagulation Clinics (ACC) are now available in most tertiary hospitals and certain polyclinics. Most of these clinics are managed by pharmacists or nurses who perform warfarin dosage adjustments according to algorithms or dosage calculators under the

purview of doctors. ACC clinics are able to achieve a reduction in time with regards to reaching the therapeutic range of warfarin in patient.

The ACC clinic in National University Hospital (NUH) manages cardiology, medical and hematology patients receiving anticoagulation. In addition to receiving dosage adjustments, patients are counselled on the safe use of warfarin. They receive detailed verbal and written advice on the signs and symptoms of bleeding and stroke, the importance of taking their medications daily, regular blood monitoring as well as informing their healthcare providers about warfarin use. Advice to avoid the use of herbal and traditional medicines, as well as the importance of consistent vitamin K intake are also emphasised.

To facilitate doctors with less experience in managing patients on anticoagulation, a **VCD in English, Mandarin and Malay on warfarin counselling** is available for sale at most retail pharmacies. In addition, MOH has produced a **Clinical Pharmacy Practice Guidelines on Anticoagulation**.

Doctors in primary care can play an important role in the step-down care of patients receiving anticoagulation through greater accessibility and timely monitoring.

**For enquiries, please call
NUH ACC Tel: 6772 5010**



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Editorial

Ms Belinda Sim, Managing Editor

Advisor

Prof Chee Yam Cheng



6 Commonwealth Lane
#04-01/02 GMTI Building
Singapore 149547
Tel: (65) 6471 8999 Fax: (65) 6471 3138
Email: partners@nhg.com.sg
Website: www.partners.nhg.com.sg