

Vascular disease – everyone's problem



There has been a significant rise in the burden of non-communicable diseases (NCDs) in the past 20 years.^[1] Atherosclerotic peripheral arterial disease (PAD) is one of the most prevalent, morbid and mortal of all the NCDs, with more than 202 million people, conservatively estimated, affected by PAD.^[2] This is about six times the 34 million people estimated to be living with HIV at the end of 2011.^[3] PAD does not only affect high-income countries. As population demographics change in low- and middle-income countries, patients are exposed to the sustained effects of exposure to the risk factors of smoking, hypertension, diabetes and dyslipidaemia.^[2] PAD also affects both young and old individuals in low- and high-income countries. Globally, there has been an increase of about 24% in PAD from 2000 to 2010.^[3] This rise in prevalence comes at a significant cost, as many low- and middle-income countries are combating the scourges of numerous debilitating communicable diseases.

The risk of ischaemic stroke increases by a factor of 1.5 for every 10 years of increase in age.^[4] The increased prevalence of heart failure, hypertension and atrial fibrillation (AF) in the older population explains the rising incidence of stroke with age. Over the age of 85 years, the prevalence of AF is as high as 10%, and 25% of strokes in patients >80 years of age are attributable to AF.^[5,6] The absolute effect of intervention with anticoagulation using warfarin in the elderly is far greater than in younger patients owing to the greater incidence of AF in the former population group.^[7]

As with AF, so too does the prevalence of deep vein thrombosis (DVT) or pulmonary embolus (PE) increase with age. In those <50 years old, the incidence of a new DVT or PE is about 1/1 000 person-years, but this rises dramatically to 6/1 000 person-years in patients >80 years old.^[8] For a number of years intervention and anticoagulation have been utilised to modify future risk.^[9] DVT prophylaxis is important, especially in patients undergoing major orthopaedic surgery, who represent a high-risk group for the development of DVTs and PEs. The novel anticoagulants, which show some promise for the prevention of thrombotic complications of surgery, have been studied extensively in this group of patients.

Warfarin and multiple other drugs are attractive therapeutic agents to limit the damages of numerous vascular NCDs, and their

development has broadened our understanding of homeostasis. These anticoagulants are not without side-effects, which may carry a significant morbidity and mortality. The vascular NCDs affect the disciplines of general and orthopaedic surgery, internal medicine and general practice worldwide. These diseases, and the agents used to manage them, are an evolving field, which has shown many rapid advances during the last 15 years. As newer anticoagulants come to the market, their advantages and disadvantages need to be explored to clearly define the niche which these often expensive agents

occupy. Clearly, the convenience afforded by the newer agents is novel and exciting when compared with the more traditional vitamin K antagonists (VKAs), but this advantage will need to be weighed up against their significant cost and lack of reversibility.



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1. Lozano R, Naghavi M, Foreman K, et al. Global and regional mortality from 235 causes of death for 20 age groups in 1990 and 2010: A systematic analysis for the Global Burden of Disease Study 2010. *Lancet* 2012;380:2095-2128. [[http://dx.doi.org/10.1016/S0140-6736\(12\)61728-0](http://dx.doi.org/10.1016/S0140-6736(12)61728-0)]
2. Fowkes FGR, Rudan D, Rudan I, et al. Comparison of global estimates of prevalence and risk factors for peripheral artery disease in 2000 and 2010: A systematic review and analysis. *Lancet* 2013;6736:1-12. [[http://dx.doi.org/10.1016/S0140-6736\(13\)61249-0](http://dx.doi.org/10.1016/S0140-6736(13)61249-0)]
3. Hirsch AT, Duval S. The global pandemic of peripheral artery disease. *Lancet* 2013;6736:13-14. [[http://dx.doi.org/10.1016/S0140-6736\(13\)61576-7](http://dx.doi.org/10.1016/S0140-6736(13)61576-7)]
4. Van Walraven C, Hart RG, Connolly S, et al. Effect of age on stroke prevention therapy in patients with atrial fibrillation: The atrial fibrillation investigators. *Stroke* 2009;40:1410-1416. [<http://dx.doi.org/10.1161/STROKEAHA.108.526988>]
5. Go AS, Hylek EM, Phillips KA, et al. Prevalence of diagnosed atrial fibrillation in adults: National implications for rhythm management and stroke prevention: The Anticoagulation and Risk Factors in Atrial Fibrillation (ATRIA) Study. *JAMA* 2001;285:2370-2375.
6. Wolf P, Abbott R, Kannel W. Atrial fibrillation as an independent risk factor for stroke: The Framingham Study. *Stroke* 1991;22:983-988. [<http://stroke.ahajournals.org/content/22/8/983.short> (accessed 13 January 2014)].
7. Hart RG, Pearce LA, Aguilar MI. Meta-analysis: Antithrombotic therapy to prevent stroke in patients who have nonvalvular atrial fibrillation. *Ann Intern Med* 2007;146:857-867.
8. Naess IA, Christiansen SC, Romundstad P, Cannegieter SC, Rosendaal FR, Hammerstrom J. Incidence and mortality of venous thrombosis: A population-based study. *J Thromb Haemost* 2007;5:692-699.
9. Shameem R, Resident S, Hill L, Ansell J, York N. Disadvantages of VKA and requirements for novel anticoagulants. *Best Pract Res Clin Haematol* 2013;26:103-114.

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