

New Aspects of the Blood Coagulation Cascade, Anticoagulants and Vein Thrombosis in Asia

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Abstract

Purpose: This review describes recent views on blood coagulation and abnormalities of its physiological control that predispose to thrombosis, suggests that venous thrombosis and pulmonary embolism are more prevalent in Asia than was previously thought, and examines recent trials of novel anticoagulants for thrombosis prevention. **Sources:** 'Medline' was used to search for publications in English or with English language abstracts. **Content and Conclusions:** The study of blood coagulation is basic to understanding clotting and bleeding disorders, their prevention and treatment. Tissue factor, factor Xa, and thrombin are pivotal; together with physiological controls (positive and negative feedback loops, and natural anticoagulants) that first enhance thrombin generation but then preserve vessel patency by limiting haemostatic plug formation to areas of injury. Abnormalities in these mechanisms can increase thrombosis risk (thrombophilia). The traditional impression that venous thromboembolism is rare in Asia has been reinforced by the rarity of thrombophilic genetic polymorphisms outside of European populations. Nevertheless, there is increasing evidence for an increasing prevalence of symptomatic vein thrombosis and pulmonary embolism in Asia, and that thrombosis rates in 'high risk' clinical settings among elderly patients (as after major joint surgery or a stroke) now approach levels reported from the West. This indicates the need for greater clinical awareness of these conditions. Drugs now used routinely for thrombosis prevention in the West (especially low molecular weight heparins) are effective and relatively safe. New anticoagulants were even more effective in recent trials. There is urgent need for studies in Asia that define the locally relevant benefits and hazards of the increasing range of agents now available.

Ann Acad Med Singapore 2002; 31:685-96

Key words: Haemostasis, Novel antithrombotics, Pulmonary embolism, Thrombophilia, Thrombosis prevention, Venous thromboembolism

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