Book review

Anticoagulants, Antiplatelets and Thrombolytics, 2nd Edition

Edited by Shaker A. Mousa. Published by Humana Press, a part of Springer Science+Business Media (www.springer.com), New York, Dordrecht, Heidelberg, London, 2010. 316 pp, price £99, ISBN: 978-1-60761-802-7

This volume is number 663 of the Methods in Molecular Biology series published by Humana Press. It is largely the work of Shaker A. Mousa who edited the volume, wrote nine of the 13 chapters and was a co-author of three of the four remaining chapters. The book is 316 pages long.

The book is principally about drugs that act as anticoagulants and antiplatelet agents which are sometimes referred to as antithrombotics. Actually, there is very little on thrombolytic agents. Some chapters provide information on laboratory and other approaches to obtain information on the antithrombotic actions of anticoagulants and antiplatelet agents. Others focus on clinical trials in which the effects of the agents have been tested in man. Others look to the possible future use of such agents in cancer and sickle cell disorders.

The first chapter describes a range of *in vitro* methods for evaluating such drugs. The main focus is on approaches using blood from animals after drug administration. There is a brief resumé of mechanisms involved in platelet adhesion to subendothelial surfaces, platelet aggregation and coagulation. This is followed by a description of coagulation and platelet aggregation testing and also something on erythrocyte deformability and rigidity. The chapter concludes with an assessment of the use of a cone-and-plate viscometer and a flow chamber.

Chapter 2 is the longest chapter in the book occupying some 90 pages. It describes animal models for drug evaluation and is quite comprehensive. It contains a wealth of technical detail regarding stasis models, vascular injury models for testing antithrombotics and also knock-outs for examination of the relevance of specific pathways relevant to haemostasis and thrombosis.

Chapter 3 provides specific information on the clinical benefits of the anticoagulants, heparin and low-molecular weight heparins. Heparin use is not without risk and Chapter 4 focuses on heparin-induced thrombocytopenia, laboratory tests for its diagnosis, and subsequent clinical management through use of alternative therapies. Chapter

5 describes anticoagulant therapies other than heparin and moves the focus to the use of oral agents and those that do not require monitoring or dose adjustment. Following this chapter 6 focuses specifically on the oral direct Factor Xa inhibitors with special emphasis on rivaroxaban.

Chapter 7 turns to antiplatelet therapies, focusing mainly on use of the P2Y₁₂ antagonist clopidogrel and the outcomes of clinical trials in which this drug has been used with aspirin. There is brief mention of the emergence of AZD6140, a reversible P2Y₁₂ antagonist, which is now known as ticagrelor. Chapter 8 is about clinical trials involving prasugrel, a novel P2Y₁₂ antagonist that appears to be more effective than clopidogrel.

Chapter 9 is about naturally derived products with an impact on coagulation and platelet function. Chapter 10 speculates on the potential value of anticoagulant and antiplatelet agents as assessed using animal models of experimental lung metastasis. Chapter 11 is about adhesion molecules on various cell types and approaches to interfere with their involvement in physiological and pathological processes. Chapter 12 describes the value of genetic information in improving the safety of pharmacotherapy. Chapter 13 is on the diagnosis and management of sickle cell disorders. The book concludes with a subject index.

This volume is largely written by the head of a team of experimentalists and researchers in the antithrombotics area for other experimentalists and researchers. The broad subject matter provides useful information for non-clinical laboratory researchers and also clinical scientists. It is quite comprehensive as far as anticoagulants and antiplatelet agents are concerned, but, despite the title, I would be disappointed if I were hoping to obtain information on where we are in the investigation and use of thrombolytics in 2010.

Competing Interests

There are no competing interests to declare.

Stan Heptinstall

Professor of Thrombosis and Haemostasis, University of Nottingham

CORRESPONDENCE

Stan Heptinstall, Cardiovascular Medicine, Queens Medical Centre, Nottingham NG7 2UH, UK.

E-mail: s.heptinstall@nottingham.ac.uk

RECEIVED

29 November 2010

ACCEPTED

19 January 2011

ACCEPTED ARTICLE

31 January 2011