Introduction: New Directions in Hemostasis and Coagulation

J LYNNE WILLIAMS

The coagulation laboratory, like other departments in the clinical laboratory, is undergoing major shifts in both the understanding of the pathologic etiology of various diseases and the diagnostic procedures used in the definitive or differential diagnosis of these diseases. Much of this new information comes from advances in the identification of causative genes for the disorders, as well as from implementation of new diagnostic genetic and molecular procedures.

The term "thrombotic microangiopathies" (TMA) refers to clinical disorders characterized by the shared features of microangiopathic hemolytic anemia, thrombocytopenia, and microvascular thrombotic lesions. The period since 2002 has witnessed significant advances in the understanding of the entities included under TMA, particularly their genetics and pathophysiologic etiologies. Historically, hemolytic uremic syndrome (HUS) and thrombotic thrombocytopenic purpura (TTP) were the major clinical conditions included in a discussion of TMA. The two share certain clinical and pathologic features, and for a number of years it was recommended that the two be included within the combined clinical classification of "TTP-HUS". However, the disorders appear to be different entities, with TTP associated with a severe deficiency of the von Willebrand factor cleaving protease ADAMTS-13, and familial and some sporadic cases of HUS associated with a deficiency of complement regulatory proteins. The current understanding of these two disorders is summarized in the following article by Margaret Schneider.

Medical textbooks have historically considered arterial and venous thromboembolic disease as distinct entities, with different pathophysiologic bases, unique risk factors, and distinct therapeutic approaches. However, a number of recent studies suggest that the classic distinction between the two may be artificial. Dorothy Adcock summarizes these findings and suggests that the diagnostic and treatment protocols for these patients may need to change.

The introduction of the laboratory assay for high-sensitivity C-reactive protein (hs-CRP) in the hemostasis laboratory evaluation of patients at risk for cardiovascular disease was an early recognition of the interaction between coagulation and inflammation. These two physiologic systems actually interact at multiple levels, and the clinical hemostasis laboratory can expect additional "inflammation" assays to be added to the coagulation test menu. The physiologic basis of their interactions is summarized in "Cross Talk Between the Inflammation and Coagulation Systems".

***J Lynne Williams PhD CLS(NCA)** is the **Focus: New Directions in Homeostasis and Coagulation** guest editor.*

The Focus section seeks to publish relevant and timely continuing education for clinical laboratory practitioners. Section editors, topics, and authors are selected in advance to cover current areas of interest in each discipline. Readers can obtain continuing education credit (CE) through P.A.C.E.® by completing the continuing education registration form, recording answers to the examination, and mailing a photocopy of it with the appropriate fee to the address designated on the form. Suggestions for future Focus topics and authors, and manuscripts appropriate for CE credit are encouraged. Direct all inquiries to the Clin Lab Sci Editorial Office, IC Ink, 858 Saint Annes Drive, Iowa City IA 52245. (319) 354-3861, (319) 338-1016 (fax). ic.ink@mchsi.com