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# INVITED SYMPOSIUM IX

## Techniques for Diagnosing Prethrombotic States.

DIAGNOSIS OF THE PRETHROMBOTIC STATE. INTRODUCTION. Jan J.Sixma. Dept. of Haematology, University Hospital, Utrecht, The Netherlands.

The purpose of this symposium is to highlight new developments in methods that may detect patients with increased risk for arterial or venous thrombosis. Some of the techniques presented rely on the presence of changed clotting factors, fibrinogen in particular, or of released peptides. A novel approach is the use of antibodies directed specifically against complexes of inhibitors with activated factors.

Blood platelets play an important role particularly in arterial thrombosis. Radio-immuno-assays have been worked out for two secretion products from platelets: platelet factor 4 and beta-thromboglobulin. Theoretically the sensitivity of these tests will be limited by the short half life of the substances. A possible useful approach is therefore the study of the properties of released platelets since it has been demonstrated that these platelets may have a normal survival. The platelet coagulant activity as predictor of thrombosis may fit in here. Other properties of released platelets such as the exposure of actin or the decreased uptake of serotonin are currently under investigation. Spontaneous aggregation in vivo or in vitro as well as a short half life of labeled platelets has been found in various thromboembolic diseases.

The predictive value of various tests should be evaluated in prospective studies. An example of such an approach is given in the paper that concludes the symposium.

FIBRINOPEPTIDE A MEASUREMENTS IN THE STUDY OF THROMBOSIS. H.L.Nossel. College of Physicians & Surgeons of Columbia University, Department of Medicine, New York, U.S.A.

Elevated plasma fibrinopeptide A (FPA) levels have been found in all patients with acute (symptoms for 5 days or less) venous or arterial thrombosis and/or embolism studied in our institution. Heparin therapy results in a decline of fibrinopeptide A levels to the normal range. In most instances the normal level is attained within 15 minutes of the start of therapy but in some instances return to normal is delayed for up to 72 hours. FPA levels have not been tested in a formal study on the prediction of thrombosis. The results will be presented of serial FPA measurements and the relationship of FPA elevations to recurrence of symptoms and extension of the disease in patients with thrombo-embolism. The usefulness of FPA tests in the diagnosis of prethrombotic states will depend on the pathophysiology of these states.

Measurement of FPA levels may be useful in predicting thrombosis under circumstances in which activation of the coagulation system precedes thrombosis. When thrombosis results from the reaction of normal blood with diseased vessel wall FPA levels will not be useful in prediction. Since the pathogenesis of thrombosis is likely to vary in different syndromes, the pathophysiology of these syndromes will have to be investigated separately to answer questions as to the usefulness of such tests in prediction.