Preface

Thrombosis is a well-recognized complication of malignant disease and can contribute significantly to the morbidity and mortality of this disease. Although the close relationship between tumor growth and the activation of blood coagulation has been known since 1865, when Professor Armand Trousseau first described the clinical association between primary or idiopathic venous thromboembolism and occult malignancy, only in the last two to three decades have significant advances in this field been achieved.

It is now well known that the clinical manifestations of thrombosis in this condition can be very different and vary from localized venous thromboembolism (VTE) to disseminated intravascular coagulation. In addition, a subclinical activation of blood coagulation or 'hypercoagulable state' is present in almost all cancer patients, even without symptoms of thrombosis. A number of pathogenetic factors have been identified, showing that activation of coagulation in cancer is a complex phenomenon, involving many different pathways of the hemostatic system and numerous interactions of the tumor cell with other blood cells, including platelets, monocytes and endothelial cells.

Even more recently, prospective clinical trials have definitely demonstrated that patients with idiopathic VTE are at significantly higher risk for a subsequent diagnosis of malignancy as compared to patients with secondary VTE (i.e. VTE due to known causes, such as congenital thrombophilia, the use of oral contraceptives, pregnancy and immobilization, among others).

Equally well demonstrated is the concept that patients with known cancer represent a particularly high-risk group for the development of secondary VTE. These patients have been stratified by the Consensus Conference of the American College of Chest Physicians into their highest risk category for the development of secondary VTE. This risk is significantly increased by the antitumor interventions, including surgery and chemotherapy. Therefore, clinical trials have been conducted or are currently ongoing to define the best modalities to give throm-

boprophylaxis routinely to these patients during chemotherapy or surgery. Another open question in the clinics of thrombosis and cancer concerns the treatment of thrombosis in those patients who have already experienced one episode of VTE. Cancer patients are indeed at increased risk of both recurrences (even with adequate levels of anticoagulation) and bleeding complications. Therefore, much effort is devoted to developing studies in these patients to define the efficacy of anticoagulant drugs and the duration and intensity of anticoagulation.

This issue of *Acta Haematologica* is devoted to investigators with interest in the fields of thrombogenesis and oncology, as well as to clinicians, including oncologists, hematologists, internists and surgeons, interested in the new insights into the identification, prevention and treatment of thrombohemorrhagic complications in cancer patients.

The most distinguished experts have collaborated in this publication to cover the most relevant aspects linking thrombosis and cancer, from epidemiology to pathogenesis and treatments. In this issue, all valuable epidemiological studies are critically reviewed. Two chapters are devoted to pathogenetic mechanisms, showing the plausibility of the association of thrombosis with malignancy. All the varieties of clinical pictures associated with malignancy are revisited, from subclinical hypercoagulable conditions to systemic syndromes, such as disseminated intravascular coagulation, thrombotic microangiopathy and hepatic veno-occlusive disease. Finally, new concepts on prophylaxis in surgical or medical conditions and treatment of thrombotic complications in patients with malignancy are provided.

It is our hope and the hope of all the contributors that this issue will outline the development of our knowledge on the interactions between the hemostatic system and malignant disease and will provide useful information to the readers on the prevention and management of thrombotic complications in cancer patients.

Anna Falanga and Tiziano Barbui, Bergamo