Editorial

GTH 2024: Building Bridges in Coagulation

Cihan Ay[1] Christoph Male[2]

[1] Clinical Division of Haematology and Haemostaseology, Department of Medicine I, Medical University of Vienna, Vienna, Austria
[2] Department of Pediatric and Adolescent Medicine, Medical University of Vienna, Vienna, Austria

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We are very happy to welcome you at the 68th Annual Meeting of the Society of Thrombosis and Haemostasis Research (GTH) in Vienna, Austria. After the years of the COVID-19 pandemic, we are returning to a congress in full presence. Our motto for the GTH 2024 congress is "Building Bridges in Coagulation," aiming at fostering collaboration in research, diagnosis, prophylaxis, and treatment of coagulation disorders. The scientific program will focus on various hot topics of our field. The congress kicks off with a keynote lecture on the role of artificial intelligence in medical research and practice, an emerging discipline that will transform science and health care in the future.

An important bridge we want to strengthen at the GTH 2024 congress is the collaboration with the neighboring countries, east and southeast of Austria (Czech Republic, Hungary, and Slovenia). Together with representatives of each of these countries, we have organized three special joint symposia on topics covering atherosclerosis and hemostasis (*Marco Gerbec Symposium:* Joint Symposium with Slovenia), genetics in thrombosis and hemostasis (*Gregor Mendel Symposium:* Joint Symposium with Czech Republic), and crosslink between infection, inflammation, and coagulation (*Ignaz Semmelweis Symposium:* Joint Symposium with Hungary). Through this congress, we aim to facilitate the exchange between these countries and the GTH countries, widening the scope of Central European collaboration.

This year's congress is also accompanied by a collection of invited reviews on topics and lectures that will be presented at the GTH 2024 in Vienna, six of which have been selected for this issue of *Hämostaseologie – Progress in Haemostasis*, the official journal of our society.

José J. Fuster (Madrid, Spain) will give a plenary lecture on clonal hematopoiesis (CH) and cardiovascular risk, and a review in this issue of the journal gives an overview on the current understanding and role of CH as a new and potent risk factor for cardiovascular disease.[1] It has been shown that acquired somatic mutations in blood cells lead to CH and contribute to the development of atherosclerosis by triggering an inflammatory response. Whether CH is also a shared driver of thrombosis needs to be further explored.

Inflammation, hemostasis, and thrombosis are intimately connected. From an evolutionary perspective, activation of the hemostatic system and formation of a blood clot as an inflammatory response plays an important role as a part of the defense mechanisms of the human body to constrain the spread of invading pathogens in the bloodstream. Conversely, platelets and the hemostatic system can interact with endothelial and immune cells and with the complement system, which exacerbates the inflammatory response, resulting in a highly prothrombotic state. To describe these processes, two terms have been coined, immunothrombosis and thromboinflammation, and **Alice Assinger** (Vienna, Austria) enlightens us on these concepts.[2]

Severe blood loss in patients with trauma initiates a complex process that leads to an imbalance and perturbation of the hemostatic system, representing a major cause of mortality in trauma patients. **Herbert Schöchl** (Salzburg, Austria) summarizes the advances made understanding this process, called trauma-induced coagulopathy (TIC), describing its definition and diagnosis and focusing on the mechanisms and pathophysiology of TIC to allow for an individualized approach of hemostatic therapy and improve patient outcomes.[3]

The risk of venous thromboembolism (VTE) in patients with cancer is continuously increasing. More recently, an elevated risk also for arterial thromboembolism (ATE) has been demonstrated in the cancer population. Traditional anticancer therapies, such as chemo- and hormonal

Address for correspondence
Cihan Ay, MD, Clinical Division of Haematology and Haemostaseology, Department of Medicine I, Medical University of Vienna, Währinger Gürtel 18-20, 1090 Vienna, Austria (e-mail: cihan.ay@meduniwien.ac.at).

Georg Thieme Verlag KG, Rüdigerstraße 14, 70469 Stuttgart, Germany

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therapies, have been associated with risk of both arterial and venous thrombosis. Novel anticancer therapies, for example, immunotherapeutic treatments, including immune checkpoint inhibitors (ICIs), chimeric antigen receptor (CAR) T-cell therapies and T-cell engaging bispecific antibodies (BiTEs), are being increasingly used in various cancer types. An update on thrombosis risk associated with novel anticancer immunotherapies is provided by **Florian Moik** (Vienna and Graz, Austria).[4]

There is a lot of excitement in the arena of anticoagulation with the development of various inhibitors of factor XI, a promising target for inhibiting thrombosis without compromising hemostasis, and thereby not increasing the risk of bleeding. Several clinical trials are currently ongoing in different indications, and **Peter Verhamme** (Leuven, Belgium) will elaborate on the rationale of factor XI inhibition in thrombosis management and its potential to reshape anticoagulation.[5]

Finally, among the other scientific highlights of the GTH 2024, there is a spotlight symposium on "100 years of thrombotic thrombocytopenic purpura: a story of death and life" and accompanying review article by **world-leading experts**.[6] After the first description of a case with thrombotic thrombocytopenic purpura (TTP), a deadly disorder of hemostasis, in the year 1924, it took a long time to discover the underlying molecular mechanisms of TTP, which later led to an accurate diagnosis and development of novel breakthrough treatments with improved outcomes today. The story of TTP exemplifies the advances in many fields of thrombosis and hemostasis achieved by scientific collaboration.

We would like to thank the authors of all the excellent review articles, all the speakers, who have accepted our invitation to contribute to the scientific and educational program of the GTH 2024 congress, and the authors of all submitted abstracts. We hope you enjoy reading the collection of articles in this issue of the journal and also further invited articles related to selected plenary and state-of-the art lectures at the GTH 2024, which will be published in the next issue of *Hämostaseologie – Progress in Haemostasis*.

Welcome to Vienna and have a wonderful GTH 2024 congress!

Conflict of Interest

C.M. and C.A. are co-congress presidents of the 68th Annual Meeting of the "Gesellschaft für Thrombose- und Hämostaseforschung" - GTH 2024, February 27–March 1, 2024, Vienna, Austria.

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