

Editorial

Productivity of Young Experts in Hemostasis and Thrombosis before and during the SARS-CoV-2 Pandemic—A Special Issue

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In September 2019, I invited **Dr. Stefano Barco**, Mainz/Zurich, who has recently been appointed a Junior Editorial Board Member, to design, organize and edit a special issue of *Hämostaseologie—Progress in Haemostasis*. Specifically, I asked Stefano to motivate a number of particularly successful members of the young scientific community from at home and abroad to submit contributions, which should reflect their current research activities in hemostasis and thrombosis. As an envisaged side effect of this initiative, I had in mind to bring international scientists among the authors closer to the Society of Thrombosis and Hemostasis Research (GTH) and to make them more familiar with GTH activities and its *Journal*. Vice versa, it was also intended to increase the awareness of young physician-scientists and young investigators conducting basic research with regard to their productivity and accomplishments among the GTH members.

Introducing the Young Investigators' Work

Dr. Barco enthusiastically accepted the task to edit such a special issue and provided me with a conceptual exposé. He also immediately proposed a list of expert authors and tentative titles. The current edition of *Hämostaseologie—Progress in Haemostasis* now presents the accomplishment of Stefano's comprehensive efforts. The eventual result is something to be proud of.

In fact, this edition is unique in several ways. It is by no means a "classic" theme issue but may rather resemble a big colorful bouquet of magnificent flowers gathered from the broad field of hemostasis and thrombosis. The composition contains frequent examples and rare "flora" specimens. To be

less pictorial, the current issue covers a variety of topics, including

- Search for cancer after acute venous thromboembolism¹
- Postthrombotic syndrome²
- Anticoagulation in the elderly³
- Septic thromboembolism⁴
- Hemophilia⁵
- Thrombotic thrombocytopenic purpura⁶
- Inherited platelet disorders⁷
- Pulmonary hypertension⁸
- Placenta-mediated pregnancy complications⁹
- Global coagulation tests.¹⁰

Most of these topics have already been covered and discussed in preceding reviews of the *Journal*, however, with a different orientation or focus and, of course, by different investigators. Of note, the current series of articles has in common that Dr. Barco had asked the present authors for their personal outlook on and prognosis of how their field might develop in the near and more distant future. You will find the personal assumptions at the end of each article in a section designated "Time Capsule." A brief biosketch is also given to introduce the authors and their research focus to our readers. In his editorial, Dr. Barco provides you with more information of the conceptual approach of this issue.¹¹ He also highlights each of the 10 contributions by brief comments or summaries.

Upon preparing this issue, the vivid and productive collaboration with Stefano and the authors during peer review



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and revision procedures had another effect. I felt inspired by closely interacting with those young scientists. As a result of the interaction, I made some reflections about mentees and mentors.¹² The corresponding article is also included in this edition.

Thrombo-inflammation in COVID-19

Since March 2020, the number of COVID-19 cases and fatalities has dramatically increased worldwide (see editorial to issue 2-2020 for reference¹³). As reported by the Johns Hopkins Coronavirus Resource Center, SARS-CoV-2 has now caused more than 12 million confirmed infections and more than 550,000 fatalities in more than 188 countries (as of July 9, 2020).¹⁴ But these numbers will be outdated and further increased when this article will be published. As an effective control of the pandemic is still pending, we are currently left with containment measures.

The challenging tasks of treating COVID-19 patients with severe courses are also reflected by the huge number of recently published studies and case reports, all of which also display a pandemic increase (more than 30,100 papers since end of December 2019, as recorded by PubMed).¹⁵

A major concern in COVID-19 patient care is the prothrombotic state. The condition results from an exuberant “whole body” inflammatory response “cytokine storm”, profound changes in hemostatic plasma proteins, and activation of the endothelium due to a systemic SARS-CoV-2 endotheliitis.^{16,17} These interacting mechanisms (nowadays designated thrombo-inflammation or immuno-thrombosis) are currently thought to induce and promote life-threatening thromboembolic complications in patients with COVID-19.¹⁸ However, the nature of the COVID-19-associated coagulopathy and its variable features still remain to be defined.^{16–18}

As of April 1, 2020, the Society of Thrombosis and Hemostasis Research (GTH) has issued empirical recommendations on the pharmacological thromboprophylaxis in patients with COVID-19. These recommendations cover the initiation, dosing, and duration of anticoagulation, and have meanwhile been updated.¹⁹ In this issue, Professor **Florian Langer** and colleagues now present a concise review on the pathology of SARS-CoV-2-associated coagulopathy, thromboembolic complications in COVID-19, and the anticoagulant management.²⁰ Faced with the plethora of recent clinical studies and the overwhelming number of case reports, the authors deserve our respect and gratitude for providing us with this important communication.

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