
VAS European Book on Angiology/
Vascular Medicine

Mariella (Maria) Catalano
Gerit-Holger Schernthaner
Katalin Farkas
Grigoris Gerotziafas
Agata Stanek
Jean Claude Wautrecht
Francesco Boccardo
Editors

VAS European Book on Angiology/Vascular Medicine

An International Expert Guide

Second Edition

 Springer

Editors

Mariella (Maria) Catalano
Department of Biomedical and Clinical
Sciences, "L. Sacco"
Research Center on Vascular Disease
University of Milan
Milano, Italy

Katalin Farkas
Department of Angiology
Szent Imre University Teaching Hospital
Budapest, Hungary

Agata Stanek
Department of Internal Medicine and
Metabolic Diseases, Faculty of Health
Sciences in Katowice
Medical University of Silesia, Upper-Silesian
Medical Centre of the Medical University of
Silesia in Katowice
Katowice, Poland

Francesco Boccardo
Department of General Surgery
University of Genova
Genova, Genova, Italy

Gerit-Holger Scherthaner
Medicine II, Angiology
Medical University and General Hospital
Vienna, Austria

Grigoris Gerotziafas
Inserm, Sorbonne University
Paris, France

Jean Claude Wautrecht
Department of Vascular Diseases
HUB Hôpital Erasme
Brussels, Belgium

ISBN 978-3-031-82231-5 ISBN 978-3-031-82232-2 (eBook)
<https://doi.org/10.1007/978-3-031-82232-2>

Original English edition published by Aracne Editrice, Gioacchino Onorati editore S.r.l., Rome, 2018.

1st edition: © VAS 2018

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Foreword by the UEMS President

It is a great privilege to contribute once again to the foreword of this outstanding educational work, now in its second edition, developed by VAS.

This new edition stands as a remarkable scientific and educational achievement. The chapters—crafted by a distinguished array of international experts—present up-to-date, evidence-based content with clarity, depth, and didactic precision. Emerging topics, forward-looking perspectives, and strong ethical foundations are interwoven throughout, offering the reader a dynamic and holistic approach to the field. The result is a textbook of true academic and clinical excellence.

As President of the UEMS, I am proud to underline the alignment of this book with the European Training Requirements (ETRs) in Angiology/Vascular Medicine, as well as its role in promoting continuous professional development. It reflects the UEMS mission to advance high standards of medical practice and education across Europe through harmonization, innovation, and cooperation.

This book is not just a reference—it is a powerful educational platform. It supports the training of young specialists, enhances the skills of seasoned professionals, and fosters multidisciplinary collaboration. Crucially, it champions a patient-centered approach while recognizing the vital contribution of all healthcare professionals involved in vascular care.

I warmly congratulate the editors, VAS leadership, and all contributing authors. Their dedication has produced a work that will undoubtedly shape clinical practice, influence policy, and inspire a new generation of vascular medicine experts across Europe and beyond.

Enjoy this superb contribution—I am sure that it will guide and inspire your practice, your learning, and your vision for the future of angiology/vascular medicine.

President, UEMS
(European Union of Medical Specialists)
London, UK

Vassilios Papalois

Foreword: VAS Short Presentation

VAS–European Independent Foundation in Angiology/Vascular Medicine is a scientific non-profit organization that has been active for over 30 years. It was the first to promote and strengthen European education in angiology/vascular medicine (used synonymously in Europe) and to advocate for its formal recognition as a medical specialty. This initiative was driven by the need to ensure qualified care for all patients and to enable effective and sustainable prevention strategies at all levels.

VAS operates independently of economic interests, upholding independent research and education as fundamental ethical principles.

As education is the cornerstone of its mission, VAS integrates high-quality training, research, clinical practice, and public awareness, while emphasizing the social responsibility of science to help improve the lives of patients and the broader population, both in Europe and globally.

VAS has also worked intensively to raise awareness of vascular diseases and their prevention, formulating proposals to improve public health policy in this field through international collaboration, with equity as a guiding value.

Over the years, VAS has launched ambitious projects and established stable international networks on major vascular diseases. It has initiated European and international joint campaigns that unite diverse scientific and clinical expertise in loyal and lasting collaboration. Its consistent activity and collaborations for awareness of vascular diseases is highlighted by the European Vascular Month (March).

VAS also supports patient engagement and health literacy, strengthening the efforts of its patient network.

Recognized by the *World Health Organization* as an *Accredited Non-State Actor (NSA) Partner*, VAS aligns closely with WHO's goals and programs.

Founded in 1991 in Milan, Italy, as a *European Working Group* on Medical Angiology (EWMA), VAS later became *VAS-Vascular-Independent Research and Education-European Organization* (an association), and more recently evolved into the scientific foundation *VAS-European Independent Foundation in Angiology/Vascular Medicine* (www.vas-int.net). International stable collaborations and partnerships with Universities and Societies are defined in the International Consortium.

After years of advocacy, in 2007 VAS succeeded in securing recognition of angiology/vascular medicine as a specialist area by the UEMS and subsequently supported the establishment and development of the *UEMS Division of Angiology/Vascular Medicine*. It has also promoted the creation of a

CESMA-UEMS specialty examination, contributing to the foundation of and becoming member of the *European Board of Examination in Angiology/Vascular Medicine (EBEAVM)*.

A Memorandum of Understanding (MoU) between UEMS and VAS was signed in 2018, highlighting their ongoing collaboration in education and accreditation.

VAS's educational activities, coordinated by the *VAS Education Committee*, are implemented through the *VAS International Academy of Vascular Medicine*, which ensures the high quality of its European education and training programs. The Academy brings together an international Faculty of university professors, clinicians and researchers, along with *Reference Center of Excellence* for hands-on training, hosted in leading institutions specializing in angiology/vascular medicine or specific subfields.

Key educational activities include the modular VAS European Master in *Angiology/Vascular Medicine*, shorter courses in different fields, the *VAS Book*, now in its thoroughly revised second edition, the *International Atlas of Clinical Cases*, innovative series of webinars, collaborative Summer schools, and more. The educational offer is continuously evolving and expanding—also through collaborations—to address the majority of training and educational needs in vascular medicine.

VAS confers personal recognition of professional quality through the *European Fellowship of Excellence in Angiology/Vascular Medicine (EFE-VAS)* for those who meet specific criteria. Postgraduate students engaged in research and/or clinical practice may receive the *VAS European In-Training Fellowship (ETF-VAS)*.

In addition, VAS honors outstanding contributions with prestigious Honorary Awards, such as: the *Prof. Gustav Born VAS International Honorary Award for Research in Vascular Medicine* (endorsed by the William Harvey Institute of London and the William Harvey Foundation), and the *Prof. Klaus Breddin VAS International Honorary Award for Education in Vascular Medicine*, which recognize lifelong excellence.

More recently, honorary *International Young Joint Awards* have been created to support young investigators and clinicians in the field of vascular medicine, involving ten leading European and international organizations with the VAS coordination.

VAS also organizes two annual academic events:

- The Winter Web Live *European Angiology Days—International Vascular Medicine Yearly Academic Conference*
- The Spring In-Person *VAS Laboratory for Vascular Medicine—Annual Update on European and International Projects*

These events connect the latest scientific and clinical updates with concrete initiatives aimed at improving healthcare effectiveness and benefits, while addressing the existing gaps between the needs and realities faced by patients, populations, researchers, clinicians, and healthcare workers in the field of vascular medicine.

VAS cooperates with a wide range of scientific organizations at the European, global, and national levels, through stable partnerships aimed at achieving meaningful and impactful results by bringing together diverse energies and ideas.

VAS Book Editors Institutions

Prof. Mariella (Maria) Catalano	University of Milan IT
Prof. Gerit-Holger Scherthaner	University of Vienna AT
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Preface

The VAS European Book: An International Expert Guide, like every major VAS' initiative, aims to broaden our perspectives and highlight the need for continuous improvement of knowledge through sustained collaboration. It promotes respect for and integration of individual expertise within an ever-evolving science that is closely tied to the “real world,” where people, patients, and we all live.

In most European countries, *Angiology* and *Vascular Medicine* are used as synonyms. For this reason, both terms are retained in the title.

Angiology/vascular medicine was defined by VAS in 1999 as follows:

Angiology/Vascular Medicine is the medical specialty dealing with vascular diseases (arterial, venous, lymphatic, and microcirculatory), focusing on prevention, diagnosis, therapy, rehabilitation, research, and education, to benefit patients and the general population. Angiology and Vascular Medicine are synonyms in different countries.

This definition was adopted by the UEMS Division of Angiology upon its creation in 2007 and published in 2013. It is now recognized as the European definition of the specialty.

This second edition of the book is not merely an update. It includes new qualified authors, emerging topics, and forward-looking approaches in the field of vascular medicine. It also highlights the central role of ethics as a fundamental pillar of medical practice. This is a European book, enriched by significant contributions from international experts.

The Book presents itself as a tool for European and international education, promoting European and global collaboration. It is part of an ambitious, ongoing effort to enhance the skills of specialists, physicians, and students, thereby improving the care we can offer and, ultimately, positively impacting our patients' lives and the future of our societies.

This is also an evolving project. We encourage young researchers and clinicians not only to study its contents but also to expand on the topics that interest them most, cultivating their expertise in vascular medicine with the passion and dedication that this fascinating field deserves. We also invite suggestions and proposals from specialists for the next edition (planned every 5 years). Though this is a well-structured initiative, it remains open to innovation and contribution.

A book is a “meeting place for minds.” It is not rendered obsolete by new technologies but instead transformed, also available as an e-book, and serving as a stimulus for future collaborative experiences. It supports other ongoing and future educational and action-based projects that form part of VAS's

commitment and goals linked to the WHO and the EU's broader health and equity vision and plans, and to the UEMS for quality accreditation.

We extend our gratitude to all the contributing authors, as well as to ISL and ESL, for their constant support in pursuing our shared goals.

We also thank our colleagues—both junior and senior—whose dedication energizes the departments, units, centers, and outpatient clinics of angiology/vascular medicine across all countries. Their unwavering commitment brings expertise and humanity to the care and prevention of vascular diseases under all, often difficult, circumstances.

We continue to work toward increasing institutional and health system attention to vascular diseases and toward securing recognition of angiology/vascular medicine as an official specialty across the EU and globally, in response to the needs of patients, the general population, and the scientific evidence.

The editors, together with the VAS boards and committees, hope you find this book stimulating and inspiring, an opportunity to strengthen and coordinate our collective efforts through broad, stable, and creative collaborations. Together, we can achieve ambitious shared goals, contribute to transforming healthcare, and ensure access to qualified prevention, appropriate care, and the respectful integration of technology with human and social needs.

On behalf of the book editors and the VAS boards

Milan, Italy
Vienna, Austria

Mariella (Maria) Catalano
Gerit-Holger Schernthaner

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About the Editors

Mariella (Maria) Catalano, MD, PhD is affiliated with the University of Milan, Department of Biomedical and Clinical Sciences. She has served as Associate Professor in Internal Medicine since 1988. Prof. Catalano directed the Research Center on Vascular Diseases and later the Inter-University Center, and she was Head of the Angiology Unit at L. Sacco University Hospital in Milan until the end of 2021. Since 2022, she has continued her academic work as Professor on Contract. She is specialized in Internal Medicine and Vascular Surgery and holds the CESMA–UEMS European Diploma in Angiology/Vascular Medicine. Prof. Catalano has been teaching at the University Medical School since 1987 and currently lectures in pre-graduate and specialty courses. She has chaired the European Master in Angiology/Vascular Medicine, first at the University of Milan and subsequently within the VAS International Academy. In 1991, she founded the European Working Group on Angiology/Vascular Medicine, launching the first European education and training programs in the field. She led these initiatives to the creation of VAS–Vascular Independent Research and Educational European Association in 1998, which was transformed in 2018 into VAS–European Independent Foundation in Angiology/Vascular Medicine. She served as President of this foundation until December 2023. From this date she has been elected and acting as VAS Honorary President, Member of the Board and Executive. She has also been a founder and elected President of UEMS-EU, Division of Angiology/Vascular Medicine from 2008 to 2016, and Honorary President since 2016. Her main expertise fields include PAD and EU Education. Member of the VAS International Academy and of the European Academy of Science and Arts. She has co-edited the first edition of the comprehensive VAS European Book on Angiology and Vascular Medicine and has published more than 180 papers in relevant peer-reviewed journals.

Gerit-Holger Scherthaner is Extra Ordinary Professor at the Medical University of Vienna and the General Hospital Vienna, Medicine II, Division of Angiology. He serves as a Senior Physician and Co-Director of Out- and Inpatients' Care, as well as the Director of Scientific Research. Additionally, he holds the position of Vice Dean Class II (Medicine) at the European Academy of Sciences and Arts (EASA). He has been a Board Member and Advisory Board Member of the European Independent Foundation in Angiology/Vascular Medicine (VAS) and in the 2023 has been elected President. He is a Member of the VAS International Academy and Board

Examination Committee Member for Internal Medicine and Internal Medicine and Angiology at the Austrian Medical Chamber (ÖAK). He also contributes as a Board Committee Member for Angiology/Vascular Medicine at the European Union of Medical Specialists (UEMS) and has previously served on the Board Committee for Phlebology at UEMS. At his university he has established and directs the final exams for the study of medicine. He is serving as supervisor in all three PhD programs related to vascular medicine: Cardiovascular and Pulmonary Disease, Vascular Biology, and Cardiovascular tissue regeneration and repair. His main expertise fields include Peripheral arterial Disease, Diabetes and Atherosclerosis. He has authored over 300 articles in peer-reviewed journals, given >300 invited lectures, and served in over 100 journals as reviewer. Currently he is also associated editor for *Journal of Endocrinological Investigations* and *Atherosclerosis*.

Katalin Farkas, MD, PhD, FESC is chief physician of the Department of Angiology in Szent Imre University Hospital, Budapest. Her specialties are internal medicine, angiology, and clinical pharmacology. Between 2005 and 2020, she was the Head of Department of Angiology in Szent Imre University Hospital, where she had developed a modern noninvasive diagnostic laboratory, in which besides the traditional Doppler and plethysmographic examinations, Duplex Ultrasound and Laser Doppler examinations have been possible since 1993. She is European hypertension specialist of the ESH, Fellow of the European Society of Cardiology, and since 2016 has CESMA-UEMS European angiology/vascular medicine qualification. She has been teaching at Semmelweis University Medical School since 2005, in Internal Medicine and Angiology. From 1997 to 2011, she was member of the Angiology Task Force of the College of Internal Medicine, which has been developing the system and professional protocols for vascular care in Hungary. She is a Member of the VAS International Academy. From 2011 to 2016 she has been member of the Advisory Board of the College of Angiology and Vascular Surgery. She is a board member (from 2011 to 2015 secretary) of the Hungarian Society of Angiology and Vascular Surgery, and of the Hungarian Society of Hypertension, where she is the head of the Vascular working group. She is Board and Executive member of VAS-European Independent Foundation in Angiology/Vascular Medicine. Her scientific interests are endothelial function and noninvasive diagnostics of vascular diseases, epidemiology and treatment of peripheral artery disease, hypertension, and cardiovascular prevention. Since 2021, she has been the managing editor of the Hungarian journal of *Hypertonia és Nephrologia*.

Grigoris T. Gerotziapas is Head of the research group "Cancer Hemostasis and Angiogenesis" in INSERM UMRS-938 (Centre de Recherche Saint Antoine Paris, France) at the Faculty of Medicine, Sorbonne University and leads the Clinical Haemostasis Group at Tenon-Saint Antoine Hospital AP-HP.6 Sorbonne Université which is an expert in the prevention and treatment of cancer-associated thrombosis, management of the antithrombotic treatment, management of perioperative bleeding, vascular complications in pregnancy management of subfertility related to vascular alterations, and optimization of antithrombotic treatment in women undergoing assisted reproductive procedures. The fundamental research of his group is focused on the interactions between cancer cells, endothelial cells, and blood coagula-

tion as well as on the mechanism of action of the antithrombotic agents in the tumor micro-environment. His group is active in translational research through the COMPASS-Thrombosis and the ROADMAP-Thrombosis projects. He also leads the translational research project COVID-19 and Thrombosis and the management of patients with vascular disease or cardiovascular risk factors, as Chair of the Scientific Committee of the VAS-European Independent Foundation in Angiology/Vascular Medicine. He is a member of the VAS International Academy, and also a member of the VAS Board. He is a Visiting Professor at the Loyola Faculty of Medicine (Department of Molecular Pharmacology and Therapeutics) in Chicago, the School of Medicine at Hofstra/Northwell (Department of Medicine, Anticoagulation and Clinical Thrombosis Services) in New York and at the Faculty of Medicine of the European University of Cyprus. He has contributed as an expert to the development of several international guidelines on the management of thrombosis and is President of the Committee for the Therapeutic Protocols for the Prevention and Treatment of Venous Thromboembolic Disease, held under the auspice of the Greek Ministry of Health.

Agata Stanek, MD, PhD is a specialist in internal medicine, angiology (vascular medicine), and diabetology. She also gained a CESMA–UEMS European Diploma. She works at the Medical University of Silesia in Katowice, Department of Internal Medicine, Metabolic Diseases and Angiology, Upper-Silesian Medical Centre of the Medical University of Silesia in Katowice, Poland. She is a Member of the VAS International Academy. She is Director of the Doctoral School of Medical University of Silesia; regional consultant in angiology for the Silesian Voivodeship; President of the Polish Society for Angiology (2024–2026); Vice-President, Executive, and Board member of the VAS-European Independent Foundation in Angiology/Vascular Medicine; Member of the Medical Examination Board for the specialty in angiology (Poland). She was Secretary of the UEMS Division of Angiology/Vascular Medicine (from 2022 to March 2024). Her clinical and research work is focused mainly on arterial, venous, and inflammatory vascular disease, chronic wounds, and metabolic diseases. She has authored more than 400 publications in peer-reviewed journals. She is also coauthor and scientific co-editor of five monographs. For her activities, she has been awarded, among others, the Golden Cross of Merit, Golden Laurel of Skills and Competence, and Golden Badge of Honor for Merits to the Silesian Voivodeship.

Jean-Claude Wautrecht is currently Invited Professor at ULB (Université Libre de Bruxelles). He is Consultant at the Department of Vascular Diseases of the HUB Hôpital Erasme, ULB, Brussels, Belgium, and at the Service of Cardiology of CHU Marie Curie Hospital, Lodelinsart, Belgium. He contributed to the development of a Medico-Surgical Department of Vascular Diseases at the HUB Hôpital Erasme from 1982.

He developed an Angiology sector inside the Service of Cardiology at the CHU Charleroi from 1994. He was Professor of Vascular Medicine at the ULB Faculty of Medicine from 2007 to 2017 and contributed as author or co-author to more than 90 publications in peer-reviewed journals. His main

areas of interest are venous thromboembolic disease, vascular acrosyndromes, peripheral arterial disease, peripheral vascular ultrasound, and defense of vascular medicine. He was Invited Professor at the Faculty of Medicine and Pharmaceutical Sciences, University of Douala, Cameroon, in 2012, and, at that time, contributed to the elaboration of a cardiovascular department at the Douala University Hospital. He is the Past-President of the UEMS Division Angiology/Vascular Medicine and a Past-President of the BWGA (Belgian Working Group on Angiology). He is a member of the Board of the VAS European Foundation, a member of ESVM, and previously a member of CFPV (Collège Français de Pathologie Vasculaire). He is a member of the VAS International Academy of Vascular Medicine. He has co-edited the first edition of the comprehensive VAS European Book on Angiology and Vascular Medicine. He has published in several peer-reviewed journals.

Francesco Boccardo, MD, PhD, FACS is Associate Professor of General Surgery at the University of Genoa, Italy, and holds the National Scientific Qualification as Full Professor of Surgery. He is Head of the Surgical Lymphology Unit within the Department of Surgery at San Martino Hospital. Prof. Boccardo currently serves as President of the European Society of Lymphology and is Immediate Past President of the International Society for Experimental Microsurgery as well as Past President of the International Society of Lymphology. His clinical practice focuses on Surgical Lymphology, Reconstructive Microsurgery, and General Surgery. Prof. Boccardo designed and implemented an original microsurgical technique for the primary prevention of arm lymphedema in patients with breast cancer, known as LY.M.P.H.A. – Lymphatic Microsurgical Preventive Healing Approach. The application of this preventive technique has since been extended to other oncological fields, including gynecological and urological tumors and cutaneous melanomas. He is a member of the VAS International Academy and has co-edited the first edition of the comprehensive *VAS European Book on Angiology and Vascular Medicine*. He is the author and co-author of more than 250 scientific publications and has contributed chapters to 25 textbooks covering general surgery, vascular surgery, and lymphatic surgery. In addition, he has been an invited speaker, President, Chairman, and member of the scientific committee at over 250 national and international congresses.

Contributors

Pierre Abraham Laboratory of Vascular Investigations, University Hospital, Angers, France

Sylvie A. Ahn Cardiology Division, Cliniques universitaires Saint-Luc, Brussels, Belgium

Louay Altarazi Varicose Veins and Vascular Clinic, Damascus, Syria

Beatrice Amann-Vesti Heart and Vascular Center, Klinik im Park, Zürich, Switzerland

Miguel Amore Vascular Anatomy Lab, Anatomy Department, Buenos Aires University, Buenos Aires, Argentina

Phlebology and Lymphology Unit, Cardiovascular Surgery Division, Central Military Hospital, Buenos Aires, Argentina

Herbert Aronow Michigan State University College of Human Medicine, East Lansing, MI, USA

Henry Ford Hospital, Detroit, MI, USA

Anita Arsovska Urgent Neurology, Faculty of Medicine, University Clinic of Neurology, University Ss. Cyril and Methodius, Skopje, North Macedonia

Markus Aschwanden Vascular Medicine/Angiology, University Hospital Basel and University of Basel, Basel, Switzerland

Stefano Barco Center for Thrombosis and Haemostasis, University Medical Center of the Johannes Gutenberg University, Mainz, Germany

Department of Vascular Medicine, University Hospital Zurich, Zurich, Switzerland

Deisy Barrios Respiratory Department, Ramon y Cajal Hospital (IRYCIS), Madrid, Spain

CIBER Enfermedades Respiratorias (CIBERES), Madrid, Spain

Jean-Paul Belgrado Coordinator Research Unit of Rehabilitation Sciences—Study Group: Lymphology—Université Libre de Bruxelles, Brussels, Belgium

Carlo Bellini Dipartimento Madre & Bambino, IRCCS Istituto G. Gaslini, Genoa, Italy

Tommaso Bellini Dipartimento Madre & Bambino, IRCCS Istituto G. Gaslini, Genoa, Italy

Bela Benczur University Medical School and 1st Department of Internal Medicine (Cardiology-Nephrology), Balassa Janos County Hospital, Szekszard, Hungary

Matteo Bertelli Chief of Genetic Laboratory, MAGI's LAB, Rovereto, Italy

Katalin Biró First Department of Medicine, University of Pécs, Pécs, Hungary

Ale Blinc Department of Vascular Diseases, University Medical Centre Ljubljana, Ljubljana, Slovenia

Faculty of Medicine, University of Ljubljana, Ljubljana, Slovenia

Francesco Boccardo President of the European Society of Lymphology, Unit of Lymphatic Surgery, Department of Surgery, University Hospital San Martino, Genoa, Italy

Unit of Surgical Lymphology—Department of Integrated Diagnostic and Surgical Sciences (DISC)—University of Genoa—Department of Surgery (DIC)—S. Martino Hospital, Genoa, Italy

Renata Marietta Böcskei Department of Pulmonology, Semmelweis University, Budapest, Hungary

Vinko Boc Department of Vascular Diseases, University Medical Centre Ljubljana, Ljubljana, Slovenia

Céline Boidin Vascular Medicine Department, Toulouse University Hospital, Toulouse, France

Giovanni Boniolo Dipartimento di Neuroscienze e Riabilitazione, Università Di Ferrara, Ferrara, Italy

Laurence M. Boon Center for Vascular Anomalies, Division of Plastic Surgery, Cliniques Universitaires Saint-Luc; VASCERN VASCA European Reference Centre, Brussels, Belgium

Center for Vascular Anomalies, Human Molecular Genetics, de Duve Institute, Université catholique de Louvain, Brussels, Belgium

Pierre Bourgeois Services of Nuclear Medicine (Universitary Hospital St Pierre), Service of Dermatology (Universitary Hospital Erasme), Service of Vascular Surgery (HIS-IZZ Hospitals), Université Libre de Bruxelles, Brussels, Belgium

Service of Nuclear Medicine and Multidisciplinary Clinic of Lymphology, Institut Jules Bordet, Université Libre de Bruxelles, Brussels, Belgium

Lex Bouter Department of Epidemiology and Data Science, Amsterdam Universities Medical Center, Amsterdam, the Netherlands

Department of Philosophy, Vrije Universiteit Amsterdam, Amsterdam, the Netherlands

Barbara Brandolin Angiology Unit, Azienda ULSS 2 Marca Trevigiana, Castelfranco Veneto, Italy

Alessandra Bura-Riviere Vascular Medicine Department, Toulouse University Hospital, Toulouse, France

David Cagney Departments of Vascular Medicine and Surgery, St. James's Hospital, Dublin, Ireland

Pietro Caliandro Department of Aging, Neurological, Orthopaedic and Head-Neck Sciences, Fondazione Policlinico Universitario Agostino Gemelli IRCCS, Rome, Italy

Corradino Campisi Honorary Fellow of the Italian Society of Surgery—SIC, Honorary President of ISEM, Chairman of Past Presidents Advisory Board ISL | President of the Italian (SIL) & Latin-Mediterranean Chapter of ISL, Past President of Italy Chapter of ACS, and of ESL, SICU, SIM, EFMS | University Full Professor of General Surgery (2004–2018), Specialist in General, Vascular & Emergency Surgery, Research Center & Scientific Section «Clinical Lymphology, Lymphatic Surgery & Microsurgery»—Department of Surgical Sciences and Integrated Diagnostics—DISC, School of Medical Sciences & Pharmaceutics—University of Genova, Genoa, Italy

Corrado Cesare Campisi Elected President of the International Society of Lymphology, Adjunct Professor of Plastic, Reconstructive & Aesthetic Surgery, University School of Catania, Italy, MBA—USI—University of Lugano (Switzerland), Consultant of Plastic, Reconstructive & Aesthetic Surgery, Lymphatic Microsurgery, GVM Care & Research: ICLAS Rapallo-Genoa, Salus Hospital Reggio Emilia, Private Hospital “Villa Serena,” Genoa. Private Hospital “Villa Montallegro,” Genoa, Italy

Paolo Candelaresi Neurology and Stroke Unit, AORN Antonio Cardarelli, Naples, Italy

Caitriona Canning Departments of Vascular Medicine and Surgery, St. James’s Hospital, Dublin, Ireland

Elisabetta Castoldi Departments of Biochemistry and Internal Medicine, Maastricht University Medical Center and Cardiovascular Research Institute (CARIM), Maastricht, the Netherlands

Center of Thrombosis and Hemostasis (CTH), Gutenberg University Medical Center, Mainz, Germany

Mariella (Maria) Catalano Department of Biomedical and Clinical Sciences, “L Sacco” Research Center on Vascular Disease, University of Milan, Milan, Italy

Marina Cestari Lymphology Sector, Territorial Rehabilitation Unit-NHS Umbria 2, Terni, Italy

Chief of Lymphology Sector, U.O.Territorial Rehabilitation-NHS Umbria 2, Terni, Italy

Angelika Chachaj Department of Angiology and Internal Medicine, Wroclaw Medical University, Wroclaw, Poland

Lena Claesson-Welsh Medical Biochemistry (LCW), Department of Immunology, Genetics and Pathology, Uppsala University, Uppsala, Sweden

Mary-Paula Colgan Department of Vascular Surgery, St. James’s Hospital, and Trinity College, Dublin, Ireland

Benilde Cosmi Division of Angiology and Blood Coagulation, Department of Specialty, Diagnostic and Experimental Medicine, S. Orsola Malpighi University Hospital IRCSS, University of Bologna, Bologna, Italy

Julia Deinsberger Department of Dermatology, Medical University of Vienna, Vienna, Austria

Elisabetta Dejana Medical Biochemistry (ED), Department of Immunology, Genetics and Pathology, Uppsala University, Uppsala, Sweden

FIRC Institute of Molecular Oncology, Milan, Italy

Sergio De Marchi Angiology and Vascular Rehabilitation Unit, University Hospital, Verona, Italy

Sara Dessalvi Unit of Surgical Lymphology—Department of Integrated Diagnostic and Surgical Sciences (DISC)—University of Genoa—Department of Surgery (DIC)—S. Martino Hospital, Genoa, Italy

Curt Diehm Max Grundig Clinic, Bühl, Germany
Academy for Vascular Diseases, Baden-Württemberg, Germany

Nicolas Diehm Vascular Institute Central Switzerland, Aarau, Switzerland

Evangelos Dimakakos Responsible of Vascular Unit of 3rd Internal Medicine Department of the University of Athens School of Sotiria General Hospital, Athens, Greece

Center of Prevention, Diagnosis and Treatment of Lymphedema -Lymphatic Diseases for Adults and Children of Metropolitan Hospital, Athens, Greece

International Society of Lymphology, Athens, Greece

Scientific Committee of European Society of Lymphology, Athens, Greece

E.C. of UEMS Angiology/Vascular Medicine, Athens, Greece

Conor Dooley Department of Vascular Surgery, St. James's Hospital, and Trinity College, Dublin, Ireland

Marko Dragas Clinic for Vascular and Endovascular Surgery, University Clinical Centre of Serbia, Belgrade, Serbia

Michael E. Edmonds Diabetic Foot Medicine, King's College London, London, UK

Diabetic Foot Clinic, Diabetes Department, King's College Hospital, London, UK

Ahmed El-Mallah Department of Vascular Surgery, St. James's Hospital, and Trinity College, Dublin, Ireland

Bengt Fagrell Professor Emeritus in Medicine, Karolinska Institutet, Stockholm, Sweden

Anna Falanga Department of Medicine and Surgery, University of Milan Bicocca, Milan, Italy

Hospital Papa Giovanni XXIII, Division of Immunohematology and Transfusion Medicine, Bergamo, Italy

Katalin Farkas Department of Angiology, Szent Imre University Teaching Hospital, Budapest, Hungary

Semmelweis University, Faculty of Angiology, Budapest, Hungary

Bahare Fazeli Support Association of Patients of Buerger's Disease (Buerger's Disease NGO), Mashhad, Iran

Sergiy Fedorov Department of Therapy, Family and Emergency Medicine of Postgraduate Faculty, Ivano-Frankivsk National Medical University, Ivano-Frankivsk, Ukraine

Krisztina Fendrik First Department of Medicine, University of Pécs, Pécs, Hungary

Roberta Fenoglio University Center of Excellence on Nephrologic, Rheumatologic and Rare Diseases (ERK-net, ERN-Reconnect and RITA-ERN Member) with Nephrology and Dialysis Unit and Center of Immunorheumatology and Rare Diseases (CMID), Coordinating Center of the Interregional Network for Rare Diseases of Piedmont and Aosta Valley (North-West Italy), San Giovanni Bosco Hub Hospital, and Department of Clinical and Biological Sciences of the University of Turin, Turin, Italy

Konstantinos Filis Division of Vascular Surgery, First Department of Propedeutic Surgery, National and Kapodistrian University of Athens, School of Medicine, Athens, Greece

Ethelka Földi Special Clinic for Lymphology, Hinterzarten, Freiburg, Germany

Isabel Forner-Cordero Lymphedema Unit. Hospital Universitari i Politècnic La Fe. Department of Medicine, University of Valencia (SPAIN), Valencia, Spain

Francis Gerald Reid Fowkes Emeritus Professor of Epidemiology, Usher Institute of Population Health Sciences and Informatics, University of Edinburgh, Edinburgh, UK

Eri Fukaya Vascular Surgery, Stanford University School of Medicine, Palo Alto, CA, USA

Jean-Philippe Galanaud University of Toronto, Toronto, ON, Canada
Department of Medicine, Sunnybrook Health Sciences Centre, Toronto, ON, Canada

George Galyfos Division of Vascular Surgery, First Department of Propedeutic Surgery, National and Kapodistrian University of Athens, School of Medicine, Athens, Greece

Reinold O. B. Gans University Medical Center Groningen, Groningen, The Netherlands

Grigoris T. Gerotziapas Sorbonne University, INSERM UMR_S_938, Saint-Antoine Research Center (CRSA), Research Department “Cancer, Vessels, Biology and Therapeutics” (CaVITE), Research Group “Cancer-Angiogenesis-Thrombosis and Haemostasis”, Paris, France

Thrombosis Center, University Institute of Cancerology (UIC), Saint Antoine University Hospital Assistance Publique Hôpitaux de Paris (AP-HP), Paris, France

Thrombosis Center, Center of Translational Research and Education, Department of Pathology and Laboratory Medicine, Loyola University Stritch School of Medicine, Maywood, Chicago, IL, United States

Costanza Giampietro Laboratory of Cell Mechanics and Mechanobiology, Empa Dübendorf and ETH Zürich, Zürich, Switzerland

Alessandro Giudici Department of Biomedical Engineering, Cardiovascular Research Institute Maastricht (CARIM) and GROW Institute for Oncology and Reproduction, Maastricht University, Maastricht, The Netherlands

Jonathan Golledge Queensland Research Centre for Peripheral Vascular Disease, College of Medicine and Dentistry, James Cook University, Townsville, QLD, Australia

The Department of Vascular and Endovascular Surgery, Townsville University Hospital, Townsville, QLD, Australia

Anders Gottsäter Department of Medicine, Lund University, Skåne University Hospital, Malmö, Sweden

Jacob Grand University of Tennessee Health Science Center, Nashville, TN, USA

Ascension St. Thomas Hospital, Nashville, TN, USA

Paolo Gresele Department of Medicine and Surgery, Section of Internal and Cardiovascular Medicine, University of Perugia, Perugia, Italy

Juan Carlos Lopez Gutierrez Department of Pediatrics, Vascular Anomalies Center, Hospital La Paz, Universidad Autonoma of Madrid, Madrid, Spain

Michel P. Hermans Endocrinology & Nutrition, Cliniques universitaires Saint-Luc, Brussels, Belgium

Clemens Höbaus Medical University of Vienna, Department of Medicine 2, Division of Angiology, Vienna, Austria

Grzegorz K. Jakubiak Department of Pharmacology, Faculty of Medical Sciences in Zabrze, Medical University of Silesia, Zabrze, Poland

Noor-Ahmed Jatoi College of Medicine, Imam Abdul Rahman Bin Faisal University, Dammam, Kingdom of Saudi Arabia

Mateja Kaja Jezovnik Department of Advanced Cardiopulmonary Therapies and Transplantation, UTHealth Science Center at Houston, Memorial Hermann Hospital Houston, Texas Medical Center, Houston, TX, USA

David Jiménez Respiratory Department, Ramon y Cajal Hospital (IRYCIS), Madrid, Spain

CIBER Enfermedades Respiratorias (CIBERES), Madrid, Spain

Medicine Department, Universidad de Alcalá (IRYCIS), Madrid, Spain

Karin Johansson Department of Health Sciences, Lund University, Lund, Sweden

Oguz Karahan Department of Cardiovascular Surgery, Medical School of Alanya Alaaddin Keykubat University, Antalya, Turkey

Debora Karetová Department of Medicine, Cardiovascular Medicine, General Faculty Hospital, First Faculty of Medicine, Charles University, Prague, Czech Republic

Panagiota Katsanou 4th Department of Internal Medicine, "Evangelismos" General Hospital, Athens, Greece

Maryam Kavousi Department of Epidemiology, Erasmus MC, University Medical Center Rotterdam, Rotterdam, The Netherlands

Gábor Késmárky First Department of Medicine, University of Pécs, Pécs, Hungary

Endre Kolossváry South-buda Centerhospital St. Imre University Teaching Hospital, Budapest, Hungary

Katalin Koltai First Department of Medicine, University of Pécs, Pécs, Hungary

Gert M. Kostner Institute of Molecular Biology and Biochemistry, Medical University of Graz, Graz, Austria

Karam M. Kostner Mater Hospital Brisbane, South Brisbane, QLD, Australia

UQ Raymond Terrace, South Brisbane, QLD, Australia

Matija Kozak Department of Internal Medicine, Ljubljana University Medical Centre, Ljubljana, Slovenia

Knut Kröger Department of Vascular Medicine, HELIOS-Klinik Krefeld, Krefeld, Germany

Emre Kubat Department of Cardiovascular Surgery, Gülhane Training and Research Hospital, Health and Science University, Ankara, Turkey

Iftikhar J. Kullo Department of Cardiovascular Medicine and the Gonda Vascular Center, Mayo Clinic, Rochester, MN, USA

Gonda Vascular Center, Mayo Clinic, Rochester, MN, USA

Albert Leduc Lymphophlebology Unit, Brussels, Belgium

Vrije Universiteit Brussel, Brussels, Belgium

Olivier Leduc Haute École HE2B ISEK, Department of Occupational and Environmental Physiology, Lymphophlebology Unit, Brussels, Belgium

Chargé de cours, Haute Ecole de Bruxelles-Brabant, Brussels, Belgium

Elmina Lefkou Sorbonne University, INSERM UMR_S_938, Saint-Antoine Research Center (CRSA), Research Department “Cancer, Vessels, Biology and Therapeutics” (CaVITE), Research Group “Cancer-Angiogenesis-Thrombosis and Haemostasis”, Paris, France

Hematology -Transfusion Medicine Department, Larissa University Hospital, Faculty of Medicine, University of Thessaly, Larissa, Greece

Claire Le Hello Department of Vascular Medicine, University Hospital of Saint-Etienne, University Jean Monnet, INSERM, Mines Saint-Etienne, Saint-Etienne, France

Hady Lichaa University of Tennessee Health Science Center, Nashville, TN, USA

Ascension St. Thomas Hospital, Nashville, TN, USA

Michael K. W. Lichtenberg Arnsberg Vascular Center, Department of Angiology, Hochsauerland Hospital, Arnsberg, Germany

Aaron Liew Discipline of Medicine, College of Medicine, Nursing and Health Sciences, University of Galway, Galway, Ireland

Department of Medicine, Portiuncula University Hospital, Saolta University Health Care Group, Galway, Ireland

Roberta Longo University Center of Excellence on Nephrologic, Rheumatologic and Rare Diseases (ERK-net, ERN-Reconnect and RITA-ERN Member) with Nephrology and Dialysis Unit and Center of Immunorheumatology and Rare Diseases (CMID), Coordinating Center of the Interregional Network for Rare Diseases of Piedmont and Aosta Valley (North-West Italy), San Giovanni Bosco Hub Hospital, and Department of Clinical and Biological Sciences of the University of Turin, Turin, Italy

Svetlana Lorenzano Department of Human Neurosciences, Sapienza University of Rome, Rome, Italy

Marzia Lugli Vascular Surgery and International Center of Deep Venous Surgery, National Reference Training Center in Phlebology UEMS, Department of Cardiovascular Surgery, Hesperia Hospital, Modena, Italy

Department of Cardiovascular Surgery, Vascular Surgery and International Center of Deep Venous Surgery, National Reference Training Center in Phlebology UEMS, Hesperia Hospital, Modena, Italy

Jenna-Marie Lundy The Transformation Team, Gilbert Scott Building, University of Glasgow, Glasgow, Scotland

Fabian O. Lurquin Endocrinology & Nutrition, Cliniques universitaires Saint-Luc, Brussels, Belgium

Clare MacRae Advanced Care Research Centre, Usher Institute, The Old Medical School, University of Edinburgh, Teviot Place, Edinburgh, UK

Ilija Makedonov Department of Medicine, Southlake Regional Health Centre, Newmarket, ON, Canada

University of Toronto, Toronto, ON, Canada

Oscar Maleti Vascular Surgery and International Center of Deep Venous Surgery, National Reference Training Center in Phlebology UEMS, Department of Cardiovascular Surgery, Hesperia Hospital, Modena, Italy

Department of Cardiovascular Surgery, Vascular Surgery and International Center of Deep Venous Surgery, National Reference Training Center in Phlebology UEMS, Hesperia Hospital, Modena, Italy

Chris A. Manu Diabetic Foot Medicine, King's College London, London, UK

George Marakomichelakis 4th Department of Internal Medicine, "Evangelismos" General Hospital, Athens, Greece

Marina Marchetti Department of Medicine and Surgery, University of Milan Bicocca, Milan, Italy

Hospital Papa Giovanni XXIII, Division of Immunohematology and Transfusion Medicine, Bergamo, Italy

Antonella Marcoccia UOSD Medicina Vascolare e Autoimmunità, Centro di Riferimento Regionale Sclerosi Sistemica, Ospedale Sandro Pertini, Via Monti Tiburtini, Rome, Italy

Josef Marek Cardiology Department, Institute for Clinical and Experimental Medicine, Prague, Czech Republic

Peter Marschang Department of Internal Medicine, Central Hospital of Bolzano (SABES-ASDAA), Teaching Hospital of Paracelsus Medical University (PMU), Bolzano, Bozen, Italy

Romeo Martini Unity of Angiology, Aulss1 Dolomiti, Belluno, Italy
Unit of Angiology, Azienda Ospedaliera Universita' di Padova, Padova, Italy

Zenia Martin Department of Vascular Surgery, St. James's Hospital, and Trinity College, Dublin, Ireland

Raul Mattassi Center for Vascular Malformations "Stefan Belov", Columbus Clinical Center, Milan, Italy

Erika Mendoza Vein-Office, Wunstorf, Germany

Stewart W. Mercer Advanced Care Research Centre, Usher Institute, The Old Medical School, University of Edinburgh, Teviot Place, Edinburgh, UK

Sandro Michelini Rehabilitative Department, San Giovanni Battista Hospital, ACISMOM, Rome, Italy

Serena Michelini U.O. Phisiatry S. Andrea Hospital – La Sapienza University, Rome, Italy

Mariagrazia Modesti UOSD Medicina Vascolare e Autoimmunità, Centro di Riferimento Regionale Sclerosi Sistemica, Ospedale Sandro Pertini, Via Monti Tiburtini, Rome, Italy

Vignes Mohan Vascular Institute Central Switzerland, Aarau, Switzerland

Lidia Molinari Campisi Clinic, Genoa, Italy

Emil Monos Institute of Clinical Experimental Research, Semmelweis University, Budapest, Hungary

Raquel Morillo Respiratory Department, Ramon y Cajal Hospital (IRYCIS), Madrid, Spain

CIBER Enfermedades Respiratorias (CIBERES), Madrid, Spain

Arashk Motiei Division of Cardiovascular Diseases, Mayo Clinic, Rochester, MN, USA

Francesco Paciullo Vita-Salute San Raffaele University, Milan, Italy
Department of Medicine and Surgery, Section of Internal and Cardiovascular Medicine, University of Perugia, Perugia, Italy

Gualtiero Palareti “Arianna Anticoagulazione” Foundation, Bologna, Italy
Unit of Angiology and Blood Coagulation, University of Bologna, Bologna, Italy

Unit of Angiology and Blood Coagulation, IRCCS Azienda Ospedaliera-Universitaria di Bologna, Bologna, Italy

Felizitas Pannier Private Practice Dermatology & Phlebology, Bonn, Germany

Cristobal Miquel Papendieck Department of Pediatric Surgery, Angiopediatria, and Grupo Fronteras de la Linfologia, Universidad del Salvador, Buenos Aires, Argentina

Silvia Parente University Center of Excellence on Nephrologic, Rheumatologic and Rare Diseases (ERK-net, ERN-Reconnect and RITA-ERN Member) with Nephrology and Dialysis Unit and Center of Immuno-Rheumatology and Rare Diseases (CMID), Coordinating Center of the Interregional Network for Rare Diseases of Piedmont and Aosta Valley (North-West Italy), San Giovanni Bosco Hub Hospital, and Department of Clinical and Biological Sciences of the University of Turin, Turin, Italy

Gaurav Parmar Section of Vascular Medicine, Massachusetts General Hospital, Harvard Medical School, Boston, MA, USA

Sasan Partovi Interventional Radiology Section, Imaging Institute, Cleveland Clinic Foundation, Cleveland, OH, USA

Bernhard Partsch Private Practice, Vienna, Austria

Rosario Pascarella Ospedale Santa Maria della Misericordia, AULSS5 Polesana, Rovigo, Italy

Neuroradiology Unit, Ospedale Santa Maria della Misericordia, AULSS5 Polesana, Rovigo, Italy

Malay Patel Department of Vascular Surgery, Apollo CVHF, Heart Institute, Ahmedabad, India

Timir K. Paul University of Tennessee Health Science Center, Nashville, TN, USA

Ascension St. Thomas Hospital, Nashville, TN, USA

Panagiotis Pavlou Diabetic Foot Clinic, King’s College Hospital, London, UK

Alain P. Pecking Department of Nuclear Medicine, Institut Curie-Centre René Huguenin, Saint-Cloud, France

Zsolt Pecsvarady Flor Ferenc Teaching Hospital—Vascular Center, Kistarcsa, Hungary

Alexandre Persu Pole of Cardiovascular Research, Institut de Recherche Expérimentale et Clinique & Department of Cardiology, Cliniques

Universitaires Saint-Luc, Université Catholique de Louvain, Brussels, Belgium

Emily Petheric Vascular Independent Research and Education, European Foundation, Milan, Italy

School of Sport, Exercise and Health Sciences, Loughborough University, Loughborough, UK

Olivier Pichot Service de Médecine Vasculaire, Centre Hospitalier Mutualiste de Grenoble, Grenoble, France

Sergio Pillon Coordinator of Digital Transformation at ASL Frosinone, Frosinone, Italy

Jan Pitha Department of Cardiology/Laboratory for Atherosclerosis Research, Center of Experimental Medicine, Institute for Clinical and Experimental Medicine, Prague, Czech Republic

Pavel Poredo Department of Vascular Diseases, University Medical Center, University of Ljubljana, Medical Faculty, Ljubljana, Slovenia

Manlio Prior Angiology and Vascular Rehabilitation Unit, University Hospital, Verona, Italy

Eberhard Rabe Private Practice Dermatology & Phlebology, Bonn, Germany

Barbara Rantner Department for Vascular and Endovascular Surgery, Klinikum rechts der Isar, Technical University of Munich, Munich, Germany

Maurizio Ricci Rehabilitative Department Le Torrette Hospital, Ancona, Italy

Marc Righini Division of Angiology and Haemostasis, Geneva University Hospitals and Faculty of Medicine, Geneva, Switzerland

Anna-Maria Rigoni Angiology and Vascular Rehabilitation Unit, University Hospital, Verona, Italy

Tom Robberechts Department of Nephrology and Hypertension, Universitair Ziekenhuis Brussel, VUB, Brussels, Belgium

Department of Cardiology, Cliniques Universitaires Saint-Luc, Université Catholique de Louvain, Brussels, Belgium

Helia Robert-Ebadi Division of Angiology and Haemostasis, Geneva University Hospitals and Faculty of Medicine, Geneva, Switzerland

Dario Roccatello University Center of Excellence on Nephrologic, Rheumatologic and Rare Diseases (ERK-net, ERN-Reconnect and RITA-ERN Member) with Nephrology and Dialysis Unit and Center of Immuno-Rheumatology and Rare Diseases (CMID), Coordinating Center of the Interregional Network for Rare Diseases of Piedmont and Aosta Valley (North-West Italy), San Giovanni Bosco Hub Hospital, and Department of Clinical and Biological Sciences of the University of Turin, Turin, Italy

Carmen Rodríguez Respiratory Department, Ramon y Cajal Hospital (IRYCIS), Madrid, Spain

Michel F. Rousseau Cardiology Division, Cliniques universitaires Saint-Luc, Brussels, Belgium

Miso Sabovi Medical Faculty Ljubljana and University Clinical Centre Ljubljana, Ljubljana, Slovenia

Michelini Sandro Diagnostica e Riabilitazione Vascolare Unit, San Giuseppe Hospital, Marino, Rome, Italy

Giovanni Scandale Research Center on Vascular Diseases and Angiology Unit, L. Sacco Hospital, Milan, Italy

Christian Schaefer Herzzentrum Bonn, Universitätsklinikum Bonn, Bonn, Germany

Gerit-Holger Schernthaner Department of Medicine 2, Division of Angiology, Medical University of Vienna, Vienna, Austria

Savino Sciascia University Center of Excellence on Nephrologic, Rheumatologic and Rare Diseases (ERK-net, ERN-Reconnect and RITA-ERN Member) with Nephrology and Dialysis Unit and Center of Immunorheumatology and Rare Diseases (CMID), Coordinating Center of the Interregional Network for Rare Diseases of Piedmont and Aosta Valley (North-West Italy), San Giovanni Bosco Hub Hospital, and Department of Clinical and Biological Sciences of the University of Turin, Turin, Italy

Michelini Serena Rehabilitative Unit S. Andrea Hospital, La Sapienza University, Rome, Italy

Maya Serhal Massachusetts General Hospital, Boston, MA, USA

Emmanuel Seront Center for Vascular Anomalies, Medical Oncology, Cliniques Universitaires Saint-Luc, VASCERN Reference Center, Brussels, Belgium

Center for Vascular Anomalies, Medical Oncology, Cliniques Universitaires Saint-Luc; VASCERN VASCA European Reference Centre, Brussels, Belgium

Alborz Sherafati Department of Cardiovascular Medicine and the Gonda Vascular Center, Mayo Clinic, Rochester, MN, USA

Aleksander Siero Collegium Medicum Jan Dlugosz University in Czestochowa, Czestochowa, Poland

Fragiska Sigala Division of Vascular Surgery, First Department of Propedeutic Surgery, National and Kapodistrian University of Athens, School of Medicine, Athens, Greece

Michelini Silvia Neurochirurgia Unit, Tor Vergata University Hospital, Rome, Italy

Falko Skrabal Institute of Cardiovascular and Metabolic Medicine, Graz, Austria

Jonas Spaak Karolinska Institutet, Department of Clinical Sciences, Division of Cardiovascular Medicine, Danderyd University Hospital, Stockholm, Sweden

Department of Cardiology, Danderyd University Hospital, Stockholm, Sweden

Muriel Sprynger Department of Cardiology, University Hospital Liège, Liège, Belgium

Agata Stanek Department of Internal Medicine, Metabolic Diseases and Angiology, Faculty of Health Sciences in Katowice, Medical University of Silesia, Katowice, Poland

Daniel Staub Vascular Medicine/Angiology, University Hospital Basel and University of Basel, Basel, Switzerland

Sabine Steiner Division of Angiology, Department of Medicine II, Medical University Vienna, Vienna, Austria

Maria S. Stoenoiu Department of Internal Medicine, Rheumatology, Cliniques Universitaires Saint-Luc, Institut de Recherche Expérimentale et Clinique, Université Catholique de Louvain, Brussels, Belgium

Velika Stoichkova Scientific Collaborators Research Unit of Rehabilitation Sciences—Study Group: Lymphology—Université Libre de Bruxelles, Brussels, Belgium

Andrzej Szuba Department of Angiology and Internal Medicine, Wrocław Medical University, Wrocław, Poland

Hugo Ten Cate Departments of Biochemistry and Internal Medicine, Maastricht University Medical Center and Cardiovascular Research Institute (CARIM), Maastricht, the Netherlands

Center of Thrombosis and Hemostasis (CTH), Gutenberg University Medical Center, Mainz, Germany

Christoph Thalhammer Angiology, Kantonsspital Aarau, Aarau, Switzerland

Kálmán Tóth First Department of Medicine, University of Pécs, Pécs, Hungary

Luca Valerio Center for Thrombosis and Haemostasis, University Medical Center of the Johannes Gutenberg University, Mainz, Germany

Department of Cardiology, University Medical Center of the Johannes Gutenberg University, Mainz, Germany

Jos C. van den Berg Department of Radiology, Clinica Luganese Moncucco, Inselspital University of Bern, Bern, Switzerland

Liesbeth Vandermeeren Scientific Collaborators Research Unit of Rehabilitation Sciences—Study Group: Lymphology—Université Libre de Bruxelles, Brussels, Belgium

Patrick Van Dreden Sorbonne University, INSERM UMRS-938, Team “Cancer Vessels, Biology and Therapeutics,” Group “Cancer—Angiogenesis—Thrombosis,” Institut Universitaire de Cancérologie, Centre de Recherche Saint Antoine, Thrombosis Center, Hôpital Saint Antoine/Tenon, Assistance Publique—Hôpitaux de Paris, Paris, France
Clinical Research Department, Stago, Gennevilliers, France

Sophie Vankerckhove Scientific Collaborators Research Unit of Rehabilitation Sciences—Study Group: Lymphology—Université Libre de Bruxelles, Brussels, Belgium

Dragan Vasic Department of Non-Invasive Vascular Laboratory, Clinic for Vascular and Endovascular Surgery, University Clinical Centre of Serbia, Belgrade, Serbia

Miikka Vikkula Center for Vascular Anomalies, Human Molecular Genetics, de Duve Institute, Université Catholique de Louvain, Brussels, Belgium

Walloon Excellence in Life Sciences and Biotechnology (WELBIO), de Duve Institute, Université Catholique de Louvain, Brussels, Belgium

Miikka Vikkula Center for Vascular Anomalies, Human Molecular Genetics, de Duve Institute, Université catholique de Louvain, Brussels, Belgium

Walloon Excellence in Life Sciences and Biotechnology (WELBIO), de Duve Institute, Université Catholique de Louvain, Brussels, Belgium

Adriana Visonà Angiology Unit, Azienda ULSS 2 Marca Trevigiana, Castelfranco Veneto, Italy

Marc Emmanuel Vuylsteke St-Andriesziekenhuis Tielt, Tielt, Belgium

Jean-Claude Wautrecht Department of Vascular Diseases, Hôpital Erasme, Université Libre de Bruxelles, Brussels, Belgium

Benedikt Weber Department of Dermatology, Medical University of Vienna, Vienna, Austria

Kristien Winckers Departments of Biochemistry and Internal Medicine, Maastricht University Medical Center and Cardiovascular Research Institute (CARIM), Maastricht, the Netherlands

Center of Thrombosis and Hemostasis (CTH), Gutenberg University Medical Center, Mainz, Germany

Tim Wittig Department of Angiology, University Hospital Leipzig, Leipzig, Germany

Marialuisa Zedde Neurology Unit, Stroke Unit, Azienda Unità Sanitaria Locale-IRCCS di Reggio Emilia, Reggio Emilia, Italy

Neurology Unit, Stroke Unit, Azienda Unità Sanitaria Locale-IRCCS di Reggio Emilia, Reggio Emilia, Italy

Mohamed Zghouzi University of Tennessee Health Science Center, Nashville, TN, USA

Ascension St. Thomas Hospital, Nashville, TN, USA