



NVTH Symposium – 5 & 6 April 2017
Golden Tulip Hotel Westduin – Koudekerke, Zeeland

Wednesday 5 April

- 11.30 – 12.30 Registration and Lunch
- 12.30 – 13.00 **Keynote Lecture I**
Suzanne Cannegieter (LUMC): *“Prevention of venous thrombosis: is prediction the future?”*
Moderator: Ton Lisman (UMCG)
- 13.00 – 14.00 **Session I: Novel Clinical Insights**
Moderators: Karina Meijer (UMCG) and Luuk Scheres (AMC/LUMC)

DEVELOPMENT AND VALIDATION OF A PRACTICAL TWO-STEP PREDICTION MODEL FOR POST-THROMBOTIC SYNDROME

Elham Amin^{1,2,3}, Sander M.J. van Kuijk³, Manuela A. Joore³, Hugo ten Cate^{1,2}, Arina J. ten Cate-Hoek^{1,2}. ¹Laboratory for Clinical Thrombosis and Haemostasis, Department of Biochemistry, Cardiovascular Research Institute Maastricht, Maastricht University, Maastricht, the Netherlands; ²Department of Internal Medicine, Maastricht University Medical Centre, the Netherlands; ³Department of Clinical Epidemiology and Medical Technology assessment, School for Public Health and Primary Care, Maastricht University, Maastricht, the Netherlands.

PATIENTS WITH CANCER-ASSOCIATED THROMBOSIS BENEFIT FROM ANTICOAGULANT TREATMENT BEYOND 6 MONTHS

I.T. Wilts¹, J. Trujillo-Santos², P.W. Kamphuisen³, Luis Hernández-Blasco⁴, Marina Lumbierres⁵, María del Carmen Díaz-Pedroche⁶, Manuel Alejandro Lorente⁷, Juan Bosco López-Sáez⁸, Maurizio Ciammaichella⁹, M.M. Monreal¹⁰; And the RIETE Investigators. ¹Dept of Vascular Medicine, University Medical Center Groningen, University of Groningen, Groningen, the Netherlands; ²Dept of Internal Medicine, Hospital Universitario Santa María de Rosel, Cartagena, Murcia, Spain; ³Dept of Vascular Medicine, University Medical Center Groningen, University of Groningen, Groningen, and Tergooi Hospital, Hilversum, the Netherlands; ⁴Dept of Pneumology, Alicante University General Hospital and Dept of Clinical Medicine, Miguel Hernandez University, ISABIAL – FISABIO, Alicante, Spain; ⁵Dept of Pneumology, Hospital Universitari Arnau de Vilanova, Lleida, Spain; ⁶Dept of Internal Medicine, Hospital Universitario 12 de Octubre, Madrid, Spain; ⁷Department of Internal Medicine, Hospital Vega Baja de Orihuela, Alicante, Spain; ⁸Department of Internal Medicine, Hospital Universitario de Puerto Real, Cádiz, Spain; ⁹Department of Emergency Internal Medicine, Ospedale St. John, Rome, Italy; ¹⁰Dept of Internal Medicine, Hospital Universitari Germans Trias i Pujol de Badalona, Universidad Católica de Murcia, Barcelona, Spain.

THE FACTOR V LEIDEN MUTATION IS ASSOCIATED WITH INCREASED SPERM COUNT

T.E. van Mens^{1,2}, U. N. Joensen^{3,4}, Z. Bochdanovits⁵, A. Takizawa⁶, J. Peter⁷, N. Jørgensen³, P.B. Szecsi⁸, J.C.M. Meijers^{7,9}, H. Weiler², E. Rajpert-De Meyts³, S. Repping¹⁰, S. Middeldorp¹. ¹Department of Vascular Medicine, Academic Medical Center, the Netherlands; ²Blood Research Institute, Blood Center of Wisconsin, Milwaukee, USA; ³Department of Growth and Reproduction, Rigshospitalet, University of Copenhagen, Denmark; ⁴International Center for Research and Research Training in Endocrine Disruption of Male Reproduction and Child Health (EDMaRC), Rigshospitalet, Denmark; ⁵Department of Clinical Genetics, VU University Medical Center, Amsterdam, the Netherlands; ⁶Department of Physiology, Medical College of Wisconsin, Milwaukee, USA; ⁷Department of Experimental Vascular Medicine, Academic Medical Center, Amsterdam, the Netherlands; ⁸Department of Clinical Biochemistry, Herlev and Gentofte Hospital, University of Copenhagen, Hellerup, Denmark; ⁹Department of Plasma Proteins, Sanquin Research, Amsterdam, the Netherlands; ¹⁰Center for Reproductive Medicine, Academic Medical Center, Amsterdam, the Netherlands.

CLINICAL USEFULNESS OF THE SAME-TT2R2 SCORE. A SYSTEMATIC REVIEW AND SIMULATION META-ANALYSIS

J.H.A. van Miert¹, S. Bos², N.J.G.M. Veeger³, K. Meijer¹. ¹Department of Haematology, University Medical Center Groningen, the Netherlands; ²Department of Internal Medicine, University Medical Center Groningen, the Netherlands; ³Department of Clinical Epidemiology, University Medical Center Groningen, the Netherlands.

- 14.00 – 14.30 Quiz
Moderator: Henri Spronk (MUMC)



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14.30 – 15.00 Tea break

15.00 – 15.30 **Keynote Lecture II**
Tilman Hackeng: “*To-die-for TFPI*”
Moderator: Joost Meijers (Sanquin)

15.30 – 16.30 **Session II: Molecular mechanisms of coagulation**
Moderators: Steven de Maat (UMCU) and Tom Plug (Sanquin)

PLASMIN CLEAVAGE OF ADAMTS-13 ENHANCES ITS ACTIVITY

Chantal C. Clark^{1*}, Mirjam M. Mebius^{1,2*}, Steven de Maat¹, Aloysius G. M. Tielens^{2,3}, Philip G. de Groot¹, Rolf T. Urbanus¹, Rob Fijnheer¹, Jaap J. van Hellemond², Coen Maas¹. ¹Department Clinical Chemistry & Haematology, University Medical Center, Utrecht, the Netherlands; ²Department Medical Microbiology & Infectious Diseases, Erasmus University Medical Center, Rotterdam, the Netherlands; ³Department Biochemistry & Cell Biology, Faculty Veterinary Medicine, Utrecht University, the Netherlands. *These authors contributed equally.

APC AND TFPI COFACTOR ACTIVITIES OF THROMBIN-CLEAVED PROTEIN S AND C4BP-PROTEIN S COMPLEX

Nahla Alshaikh, Jan Rosing, Tilman Hackeng. Department of Biochemistry, Maastricht University, Maastricht, The Netherlands.

CLEAVED KININOGEN AS A BIOMARKER FOR BRADYKININ PRODUCTION

Z.L.M. Hofman^{1,2}, S. de Maat¹, C. Suffritti³, C.L.R. van Doorn¹, D. Csuka⁴, A. Zanichelli³, N. Veszeli⁴, G. Pasterkamp¹, T. René^{5,6}, M. Cicardi³, H. Farkas⁴, E. Hack², C. Maas¹. ¹University Medical Center Utrecht, Laboratory of Clinical Chemistry and Hematology, Utrecht, The Netherlands; ²University Medical Center Utrecht, Laboratory for Translational Immunology, Utrecht, The Netherlands; ³Luigi Sacco Hospital Milan, University of Milan, the Department of Biomedical and Clinical Sciences, Milan, Italy; ⁴Semmelweis University, 3rd Department of Internal Medicine, Budapest, Hungary; ⁵Karolinska Institutet and University Hospital, the Department of Molecular Medicine and Surgery, Stockholm, Sweden; ⁶University Medical Center Hamburg-Eppendorf, the Institute of Clinical Chemistry and Laboratory Medicine, Hamburg, Germany.

STRUCTURAL AND FUNCTIONAL CHARACTERIZATION OF ANTICOAGULANT TIX-5, THE SPECIFIC INHIBITOR OF THE ACTIVATION OF FV BY FXA

Anja Maag^{1,2}, Priyanka Sharma¹, Tim Schuijt¹, Wilhelmina Kopatz³, Daniëlle Kruijswijk¹, Arnoud Marquart⁴, Tom van der Poll¹, Tilman Hackeng⁵, Gerry Nicolaes⁵, Joost Meijers^{3,4}, Mettine H.A. Bos², Cornelis van 't Veer¹. ¹Center for Experimental and Molecular Medicine, Academic Medical Center, Amsterdam, The Netherlands; ²Division of Thrombosis and Hemostasis, Leiden University Medical Center, Leiden, The Netherlands; ³Experimental Vascular Medicine Department, Academic Medical Center, Amsterdam, The Netherlands; ⁴Department of Plasma Proteins, Sanquin Research, Amsterdam, The Netherlands; ⁵Department of Biochemistry, Maastricht University, Maastricht, The Netherlands.

16.30 – 17.30 **Van Creveld Lecture:**
Flip de Groot (UMCU): “*The antiphospholipid syndrome. A critical review*”
Moderator: Saskia Middeldorp (AMC)

17.30 – 17.45 Presentation NVTH Awards
Moderators: Saskia Middeldorp (AMC) + Shirley Uitte de Willige (EMC)

18.00 – ... Dinner and party at Kon-tiki (beach)



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Thursday 6 April

07.30 – 09.00 Breakfast

09.00 – 09.30 **Keynote Lecture III**
Suzanne Korporaal (UMCU): *“The relation between platelets and lipids, living apart together”*
Moderator: Mark Roest (Synapse)

09.30 – 10.30 **Session III: Platelets**
Moderators: Rolf Urbanus (UMCU) and Judith Cosemans (MUMC)

A POTENTIAL ROLE OF PLATELET ACTIVATION IN THE PROGRESSION OF ATRIAL FIBRILLATION

S.C. Dólleman, H.C. de Boer and A.J. van Zonneveld. Department of Internal Medicine (Nephrology) and the Einthoven Laboratory for Vascular and Regenerative Medicine, Leiden University Medical Centre, The Netherlands.

THE INVOLVEMENT OF $\alpha_{IIb}\beta_3$ INTEGRIN ON THE RELEASE OF EXTRACELLULAR VESICLES AND THE CHEMOKINES CXCL4 AND CCL5 BY PLATELETS

Alexandra.CA. Heinzmann, Tanja Vajen, Johan. WM. Heemskerk, Judith. M. Cosemans, Tilman. M. Hackeng, Rory. R. Koenen. Department of Biochemistry, Cardiovascular Research Institute Maastricht (CARIM), Maastricht University, Maastricht, The Netherlands.

DIFFERENT ROLES FOR PLATELET GLYCOPROTEIN VI AND CLEC2 DURING GRAM NEGATIVE PNEUMONIA DERIVED SEPSIS

Theodora A.M. Claushuis¹, Alex F. de Vos¹, Bernard Nieswandt², Louis Boon³, Joris J.T.H. Roelofs⁴, O.J. de Boer⁴, Cornelis van 't Veer¹ and Tom van der Poll^{1,5}. ¹Center for Experimental and Molecular Medicine, Academic Medical Center, University of Amsterdam, Amsterdam, the Netherlands; ²Institute of Experimental Biomedicine, University Hospital Würzburg and Rudolf Virchow Center for Experimental Biomedicine, University of Würzburg, Würzburg, Germany; ³Bioceros, Utrecht, The Netherlands; ⁴Department of Pathology, Academic Medical Center, University of Amsterdam, Amsterdam, the Netherlands; ⁵Division of Infectious Diseases, Academic Medical Center, University of Amsterdam, Amsterdam, the Netherlands.

VALIDATION OF A FLOW CYTOMETRIC PLATELET FUNCTION TEST IN A COHORT OF PATIENTS WITH A SUSPECTED PLATELET FUNCTION DISORDER

I van Asten¹, M Baaij¹, J Zandstra¹, A Huisman¹, G Pasterkamp¹, REG Schutgens², SJA Korporaal¹, RT Urbanus¹. ¹Department of Clinical Chemistry and Haematology, University Medical Center Utrecht, the Netherlands; ²Van Creveld Clinic, University Medical Center Utrecht, the Netherlands.

10.30 – 11.00 **Additional Lecture**
Speaker: Ton van Raan (Leiden University): *“A bibliometric view on thrombosis research: the Netherlands in international perspective”*
Moderator: Henri Versteeg (LUMC)

11.00 – 11.30 Coffee break

11.30 – 12.00 **Keynote Lecture IV**
Mettine Bos: *“Learning from the adaptive evolution of snake venom proteins”*
Moderator: Kees van 't Veer (AMC)



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12.00 – 13.00

Session IV: Thrombosis and bleeding disorders

Moderators: Marieke Kruip (EMC) and Ingrid Bistervels (AMC)

ACUTE LOWERING OF FACTOR XII INDUCES ACCELERATED SPONTANEOUS VENOUS THROMBOSIS IN MICE: NEW EVIDENCE FOR THE CONTACT SYSTEM THAT “IDLES”?

Marco Heestermans^{1,2}, Katrin F. Nickel³, René van Oerle⁴, Henri H. Versteeg^{1,2}, Pieter H. Reitsma^{1,2}, Tobias A. Fuchs³, Thomas Renné³, Henri M. Spronk⁴, Bart J.M. van Vlijmen^{1,2}. ¹Eindhoven Laboratory for Experimental Vascular Medicine; ²Department of Internal Medicine, Division of Thrombosis and Hemostasis, Leiden University Medical Center, Leiden, The Netherlands; ³Institute of Clinical Chemistry and Laboratory Medicine, University Medical Center Hamburg-Eppendorf, Hamburg, Germany; ⁴Department of Internal Medicine and Biochemistry, Maastricht University, Maastricht, The Netherlands.

ALLELE-SPECIFIC INHIBITION OF VON WILLEBRAND FACTOR P.CYS2773SER RESTORES A SEVERE MULTIMERIZATION DEFECT

A. de Jong, R.J. Dirven, J.A. Oud, D. Tio and J. Eikenboom. Eindhoven Laboratory for Vascular and Regenerative Medicine, Department of Thrombosis and Hemostasis, Leiden University Medical Center, Leiden, The Netherlands.

MICE LACKING THE NOVEL VENOUS THROMBOEMBOLISM SUSCEPTIBILITY GENE SLC44A2 HAVE NORMAL HEMOSTASIS, BUT REDUCED FIBRIN ACCUMULATION UPON VASCULAR INJURY

J. Tilburg¹, R. Adili³, T.S. Nair², M.E. Hawley³, B.J.M. van Vlijmen¹, D.C. Tuk¹, H.M. Spronk⁴, M. Holinstat³, T.E. Carey², C.X. Maracle¹. ¹Eindhoven Laboratory for Experimental Vascular Medicine, Department of Internal Medicine, Division of Thrombosis and Hemostasis, Leiden University Medical Center, Leiden, The Netherlands; ²Kresge Hearing Research Institute, Department of Otolaryngology/Head and Neck Surgery, University of Michigan, Ann Arbor, Michigan, USA; ³Department of Pharmacology and Department of Internal Medicine, Division of Cardiovascular Medicine, University of Michigan, Ann Arbor, Michigan, USA; ⁴Laboratory for Clinical Thrombosis and Hemostasis, Department of Internal Medicine and Biochemistry, Cardiovascular Research Institute Maastricht, Maastricht University Medical Center, Maastricht, The Netherlands.

GENES ASSOCIATED WITH VENOUS THROMBOEMBOLISM IN COLORECTAL CANCER PATIENTS

Betül Ünlü¹, Jim Crama¹, Nick van Es², Wibowo Arindrato³, Szymon M. Kielbasa³, Hans-Martin Otten⁴, Peter J. Kuppen⁵, Suzanne Cannegieter^{1,6}, Henri H. Versteeg¹. ¹Department of Thrombosis and Hemostasis, Eindhoven Laboratory for Experimental Vascular Medicine, Leiden University Medical Center, Leiden, The Netherlands; ²Department of Vascular Medicine, Academic Medical Center, Amsterdam, The Netherlands; ³Sequence Analysis Support Core, Leiden University Medical Center, Leiden, The Netherlands; ⁴Slotervaart Hospital, Amsterdam, The Netherlands; ⁵Department of Surgery, Leiden University Medical Center, Leiden, The Netherlands; ⁶Department of Clinical Epidemiology, Leiden University Medical Center, Leiden, The Netherlands.

13.00 – 14.00

Lunch

14.00 – 14.30

NVTH Annual meeting

14.30 – 15.00

Keynote Lecture V

Anske van der Bom: “Factor VIII products and inhibitory antibodies: fake or true?”

Moderator: Jan Voorberg (Sanquin)

15.00 – 16.00

Session V: Coagulation in clinical practice

Moderators: Roger Schutgens (UMCU) and Jelle Posthuma (MUMC)

COMPARING PLATELET-DEPENDENT VON WILLEBRAND FACTOR ACTIVITY ASSAYS IN 661 PATIENTS WITH VON WILLEBRAND DISEASE - FROM THE WIN STUDY

J. Boender¹, J. Eikenboom^{2,3}, J.G. van der Bom^{4,5}, K. Meijer⁶, J. de Meris⁷, K. Fijnvandraat⁸, M.H. Cnossen⁹, B. Laros-van Gorkom¹⁰, E. Mauser-Bunschoten¹¹, M.P.M. de Maat¹, and F.W.G. Leebeek¹, for the WiN Study Group. ¹Erasmus University Medical Center, Hematology, Rotterdam, The Netherlands; ²Leiden University Medical Center, Thrombosis



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and Hemostasis, Leiden, The Netherlands; ³Leiden University Medical Center, Einthoven Laboratory for Experimental Vascular Medicine, Leiden, The Netherlands; ⁴Leiden University Medical Center, Clinical Epidemiology, Leiden, The Netherlands; ⁵Sanquin Research, Jon J van Rood Center for Clinical Transfusion Medicine, Leiden, The Netherlands; ⁶University Medical Center Groningen, Hematology, Groningen, The Netherlands; ⁷Netherlands Hemophilia Society, Nijkerk, The Netherlands; ⁸Emma Children's Hospital, Academic Medical Center, Pediatric Hematology, Amsterdam, The Netherlands; ⁹Erasmus University Medical Center - Sophia Children's Hospital, Pediatric Hematology, Rotterdam, The Netherlands; ¹⁰Radboud university medical center, Hematology, Nijmegen, The Netherlands; ¹¹University Medical Center Utrecht, van Creveldkliniek/department of Hematology, Utrecht, The Netherlands.

ORAL ANTICOAGULANTS AS MODULATORS OF ARTERIAL CALCIFICATION

Rick H. van Gorp^{1,2}, Armand Jaminon¹, Matthias Bauwens³, Jan Bucerius³, Vincent Brandenburg⁴, Willi Jahnen-Dechent⁵, Henri M.H. Spronk¹, Chris P. Reutelingsperger¹ and Leon J. Schurgers¹. ¹Department of Biochemistry, Cardiovascular Research Institute Maastricht, Maastricht University Medical Centre, Maastricht, The Netherlands; ²Nattopharma ASA, Hovik, Norway; ³Department of Radiology and Nuclear Medicine, Cardiovascular Research Institute Maastricht, Maastricht University Medical Centre, Maastricht, The Netherlands; ⁴Department of Cardiology, University Hospital of the RWTH Aachen, Germany; ⁵Helmholtz-Institute, RWTH Aachen, Aachen.

BLEEDING PHENOTYPE IN NON-SEVERE HEMOPHILIA A HAS A BETTER ASSOCIATION WITH THE ONE-STAGE THAN THE CHROMOGENIC ASSAY

L.M. Schütte¹, I. van Moort², S.C.M. Stooft¹, J.S. Biedermann¹, M.H. Cnossen², F.W.G. Leebeek¹, M.P.M. de Maat¹, M.J.H.A. Kruip¹. ¹Department of Hematology, Erasmus University Medical Center, Rotterdam; ²Department of Pediatric Hematology, Sophia Children's Hospital, Erasmus University Medical Center, Rotterdam.

PREOPERATIVE SCREENING FOR BLEEDING DISORDERS: A COMPREHENSIVE LABORATORY ASSESSMENT OF CLINICAL PRACTICE

Minka J.A. Vries¹, Paola E.J. van der Meijden¹, Gerhardus J.A.J.M. Kuiper², Patricia J. Nelemans³, Rick J.H. Wetzels⁴, René van Oerle^{1,4}, Marcus D. Lance^{2,5}, Hugo ten Cate^{1,6}, Yvonne M.C. Henskens^{1,4}. ¹Maastricht University, Biochemistry, Cardiovascular Research Institute Maastricht (CARIM), The Netherlands; ²Maastricht University Medical Centre+ (MUMC+), Anaesthesiology, Maastricht, The Netherlands; ³MUMC+, Epidemiology; ⁴MUMC+, Central Diagnostic Laboratory; ⁵Hamad Medical Centre, Anaesthesiology, Qatar, United Arab Emirates; ⁶MUMC+, Internal Medicine, Maastricht, The Netherlands.

16.00 – 16.30

Results quiz, presentation Jeanne Stibbe bokaal and closure

Moderators: Saskia Middeldorp (AMC) + Shirley Uitte de Willige (EMC)