

15th Conference of the European Society for
Clinical Hemorheology and Microcirculation (ESCHM)
Pontresina/St. Moritz
June 28–July 1, 2009

Scientific Program

Sunday, June 28th, 2009

16:00–20:00 **Registration at the Rondo Conference Center**

18:00 **Informal Welcome Reception at the Rondo Conference Center**

Monday, June 29th, 2009

08:30–09:00 **Opening Ceremony** Room: Arabella
W.H. Reinhart / F. Jung

09:00–09:45 **Plenary Lecture L1** Room: Arabella
S. Forconi: Jean Louis Marie Poiseuille and the pathophysiology
of microcirculation – 180 years after
Chairperson: F. Jung

09:45–10:15 **Coffee Break**

10:15–12:00 **Symposium S1: INTERACTION OF BLOOD CELLS WITH SURFACES** Room: Arabella
Chairpersons: F. Jung / R.P. Franke

S1-1 Degradation of and angiogenesis around multiblock copolymers based on poly(p-dioxanone)/poly(ϵ -caprolactone) subcutaneously implanted in the rat neck

B. Hiebl

S1-2 Permeability of biological and technical tissues

R.P. Franke

S1-3 Local hemodynamic forces affect endothelial susceptibility to circulating TNF- α : Monocyte recruitment and adhesion molecule expression in bifurcating flow-through channels

I. Cicha, K. Osterode, M. Goppelt-Struebe, K. Beronov, W.G. Daniel and C.D. Garlich

- S1-4 Tissue engineering with calcium phosphate composite scaffolds
T. Scharnweber, J. Fink, R. Fuhrmann, C. Santos, M.M. Almeida, M.E.V. Costa and R.P. Franke
- S1-5 Post-mortem analysis of a left atrial appendage occlusion device (PLAATOTM) in a patient with permanent atrial fibrillation
U. Gerck, J.-W. Park, R.P. Franke and F. Jung

10:15–12:00 **Symposium S2: EXERCISE AND HEMORHEOLOGY**

Room: Giarson

Chairpersons: Ph. Connes / J.-F. Brun

- S2-1 The effects of habitual physical activity on plasma vascular adhesion and inflammatory markers in sickle cell trait carriers
C. Martin, E. Aufradet, L. Messonnier, S. Oyono-Enguelle, P. Thiriet and L. Feasson
- S2-2 Exercise-induced changes in eNOS pattern of erythrocytes
F. Suhr, K. Brixius, P. Platen and W. Bloch
- S2-3 Impaired blood rheology in SCT carriers during exercise but few anomalies: Why?
P. Connes, J. Tripette, M. Romana, O. Hue and M.D. Hardy-Dessources
- S2-4 Exercise hemorheology in hypobaric low-oxygen environments
S. Shin and S. Sunwoo
- S2-5 Old and new paradoxes in exercise hemorheology
J.F. Brun, E. Raynaud de Mauverger and E. Varlet-Marie

12:00–13:15 **Standing Lunch**

13:15–14:00 **Plenary Lecture L2**

Room: Arabella

G.B. Nash: Haemorheological factors influencing the adhesion of blood cells to the wall of vessels in inflammation and thrombosis
Chairperson: J.-L. Wautier

14:00–15:30 **Symposium S3: RED BLOOD CELL ADHESION IN HUMAN PATHOLOGY**

Room: Arabella

Chairpersons: J.-L. Wautier / G.B. Nash

- S3-1 Molecular basis of sickle cell adhesion to blood vessel
P. Bartolucci, Y. Colin, A. Habibi, D. Bachir, F. Galactéros, C. Le Van Kim and W. El Nemer
- S3-2 Abnormal red blood cell adhesion in patients with hereditary spherocytosis and central retinal vascular occlusion
Y. Colin, E. Gauthier, W. El Nemer, M.P. Wautier, O. Hermine, J. Dealanay, J.L. Wautier, C. Le Van Kim and E. Héron

- S3-3 Red blood cell adhesion and vascular thrombosis in polycythemia vera
M.P. Wautier, J.L. Wautier and N. Grossin
- S3-4 Receptor for advanced glycation end product isoforms and diabetic vasculopathy
N. Grossin, J.L. Wautier and M.P. Wautier
- 14:00–15:30 **Symposium S4: COMPARATIVE EVALUATION OF INSTRUMENTS FOR MEASURING RED BLOOD CELL AGGREGATION AND DEFORMABILITY (International Society for Clinical Hemorheology)** Room: GiarSun
Chairpersons: H.J. Meiselman / O.K. Baskurt
- S4-1 Comparison of three instruments for measuring red blood cell aggregation
T. Alexy, H.J. Meiselman, O.K. Baskurt, M.R. Hardeman, M. Uyklu, P. Ulker, M. Cengiz, N. Nemeth and S. Shin
- S4-2 Comparison of three erythrocyte ektacytometers
M. Hardeman, S. Shin, O. Baskurt, N. Nemeth, M. Uyklu, P. Ulker, M. Cengiz, T. Alexy and H.J. Meiselman
- S4-3 Parameterization of shear stress–elongation index curves obtained by ektacytometry
O.K. Baskurt, N. Nemeth, M.R. Hardeman, M. Uyklu, M. Cengiz, S. Shin, T. Alexy and H.J. Meiselman
- 15:30–15:45 **Coffee Break**
- 15:45–17:00 **Free Communications I: “HEART AND VEINS”** Room: Arabella
Chairpersons: M. Jünger / K. Toth
- FI-1 Comparison of hemorheological variables in ST-elevation myocardial infarction versus those in non-ST-elevation myocardial infarction or unstable angina pectoris
E. Cecchi, A. Alessandrello Liotta, A.M. Gori, S. Valente, C. Giglioli, C. Lazzeri, F. Sofi, G.F. Gensini, R. Abbate and L. Mannini
- FI-2 Relationship between blood viscosity and infarct size in patients with ST-segment elevation myocardial infarction undergoing primary percutaneous coronary intervention
E. Cecchi, A. Alessandrello Liotta, A.M. Gori, S. Valente, C. Giglioli, C. Lazzeri, F. Sofi, G.F. Gensini, R. Abbate and L. Mannini
- FI-3 Evolution of rheological properties of erythrocytes and left ventricular geometry in cardiovascular disease risk patients
M. Fornal, R. Korbut, J. Krolczyk and T. Grodzicki
- FI-4 Effects of exercise training on skin blood vessel function in post-surgical varicose vein patients
M. Klönizakis, G. Tew, J. Michaels and J. Saxton

- FI-5 Study on the epidemiology and treatment of chronic venous disease (CVI) in Pomerania, Germany
M. Jünger, A. Arnold, B. Liebeke, H. Haase, H. Völtzke, D. Alte and A. Ladwig

15:45–17:15 **Free Communications II: “CLINICAL HEMORHEOLOGY”**
Chairpersons: J.-F. Brun / T. Gori

Room: Giarson

- FII-1 Statins precondition the human endothelium via a COX-2 dependent mechanism. Evidence for a beneficial effect of statins and of a negative one of COX-2 inhibitors
T. Gori, A. Liuni, M. Luca and J. Parker
- FII-2 Erythrocyte aggregation and plasma fibrinogen concentration in females aged 65 to 74 years undergoing moderate intensity exercise for 24 weeks
R. Christy, S. Marshall-Gradisnik, S. Ramos, E. Brenu, O. Baskurt, C. Minahan, S. Sabapathy, K. Ashton and G. Gass
- FII-3 Both overall adiposity and abdominal adiposity increase blood viscosity by separate mechanisms
J.F. Brun, E. Varlet-Marie and E. Raynaud de Mauverger
- FII-4 Minimal model-derived insulin sensitivity, insulin secretion and glucose tolerance: relationships with blood rheology
J.F. Brun, E. Varlet-Marie and I. Aloulou
- FII-5 Hemorheological profile of an Australian chronic fatigue syndrome/myalgic encephalomyelitis population
E. Brenu, K. Ashton, S. Ramos, R. Christy and S. Marshall-Gradisnik
- FII-6 Effects of multi-set versus single-set resistance exercise protocols on hemorheological variables
S. Ahmadizad, S. Nikookheslat, M.R. Kordi, H. Ebrahimi and S. Babri

17:45 **Start of the Evening Program (Excursion to Muottas Muragl)**

Tuesday, June 30th, 2009

08:30–10:15 **Symposium S5: INTERRELATIONSHIP BETWEEN ENDOTHELIAL WALL AND BLOOD UNDER NORMAL AND PATHOLOGICAL CONDITIONS (Italian Society for Clinical Hemorheology and Microcirculation)**
Chairpersons: G. Caimi / A. Colantuoni

Room: Arabella

- S5-1 Skin vasomotion investigation in clinical practice: How and why?
M. Rossi
- S5-2 Slow Frequency waves flowmotion in POAD
R. Martini and G.M. Andreozzi

- S5-3 Ischemic preconditioning as a therapeutic strategy
T. Gori
- S5-4 Behaviour of healthy and diseased red blood cells under flow conditions
P. Caprari
- S5-5 Erythrocyte rheology in diabetes mellitus and hypertension
G. Caimi and R. Lo Presti
- 08:30–10:15 **Symposium S6: ULTRASOUND ON THE WAY TO MICRO-CIRCULATION (German Society for Clinical Microcirculation and Hemorheology)** Room: Giarsun
Chairpersons: E.M. Jung / D.-A. Clevert
- S6-1 Tumor microcirculation of head and neck lesions using elasticity and contrast agent imaging
D.A. Clevert, R. Gürkov, V. Siedek and M. Reiser
- S6-2 Quantitative assessment of bowel wall vascularisation in Crohn's disease with contrast-enhanced ultrasound and perfusion analysis
C. Girlich, E. Jung, I. Iesalniks, A. Schreyer and D. Schacherer
- S6-3 Rapid adaptation of intrarenal resistance index after living donor kidney transplantation
C. Thalhammer
- S6-4 Microcirculation and tumor perfusion of subepithelial lesions in the stomach
K. Stock, C. Hann von Weyhern, J. Slotta-Huspenina, M. Burian, B. Klein, A. Meining and C. Lersch
- S6-5 Evaluation of microcirculation of deep buried free flaps by Contrast Harmonic Imaging (CHI) with Time Intensity Curve (TIC) analysis
L. Prantl, P. Lamby and E. Jung
- S6-6 Micro- and macroangiopathic complications in diabetes mellitus: comprehensive assessment with whole-body MRI and ultrasound
S. Weckbach, D.A. Clevert, M. Reiser and S. Schoenberg
- 10:15–10:45 **Coffee Break**
- 10:45–11:30 **FAHRAEUS AWARD LECTURE: F. Jung** Room: Arabella
Laudatio: M. Rampling
- 11:30–13:00 **Poster Viewing**
- 12:00–13:00 **Meeting of the Editorial Board CHM** Room: Roseg
- 13:00–14:00 **Standing Lunch**
- 14:00–14:45 **Plenary Lecture L3** Room: Arabella
P. Bärtsch: Mechanisms and limits of acclimatisation to hypoxia
Chairperson: W.H. Reinhart

- 14:45–15:30 **Plenary Lecture L4** Room: Arabella
H.J. Meiselman: Erythrocyte aggregation: Why and why bother?
 Chairperson: F. Jung
- 15:30–15:45 **Coffee Break**
- 15:45–17:00 **Symposium S7: METHODOLOGY – NEW DEVELOPMENTS** Room: Arabella
IN HEMORHEOLOGY
 Chairpersons: M.R. Hardeman / S. Shin
- S7-1 Changes of electrical impedance and capacitance of RBC sus-
 pensions during aggregation
M. Uyklu, O.K. Baskurt and H.J. Meiselman
- S7-2 Transient, microfluidic approach to the investigation of ery-
 throcyte aggregation: The critical shear stress for erythrocyte
 disaggregation
S. Shin and J.X. Hou
- S7-3 Osmotic gradient red cell ektacytometry (Osmoscan):
 First clinical and experimental experiences with the LORCA
 MaxSis
*M. Hardeman, P. Franck, L. Da Costa, S. Hendriks and
 T. Cynober*
- S7-4 Using well plate microfluidic technology to study cellular ad-
 hesion and migration processes under physiologic flow con-
 ditions
A. Pabler, C. Conant and M. Schwartz
- 15:45–17:00 **Symposium S8: RED CELL AGGREGATION, HEMORHEO-** Room: Giarsun
LOGY AND CEREBRAL CIRCULATION
(Bulgarian Society of Biorheology)
 Chairpersons: N. Antonova / O.K. Baskurt
- S8-1 Red blood cell aggregation investigated with conductometric
 and image analysis techniques at non equilibrium flow condi-
 tions
N. Antonova, I. Ivan, E. Kaliviotis and M. Ynneskis
- S8-2 Mean blood pressure influences the relationship between
 hemorheological parameters and neurosonological variables
 of carotid arteries in patients with cerebral infarctions
*I. Velcheva, E. Titianova, N. Antonova, N. Dimitrov and
 P. Damianov*
- S8-3 Blood flow asymmetry and hemorheological disturbance in
 the extra- and intracranial arteries in patients with cerebral
 infarction
*I. Velcheva, E. Titianova, N. Antonova, N. Dimitrov and
 P. Damianov*

- S8-4 Common carotid artery hemodynamic forces in patients with cerebral infarction
I. Velcheva, N. Antonova, P. Damianov, N. Dimitrov and I. Ivanov

17:30 **Start of the Evening Program (Excursion to Diavolezza)**

Wednesday, July 1st, 2009

09:00–10:45 **Symposium S9: HEMORHEOLOGY FOR THE SUPPORT OF CARDIOVASCULAR DIAGNOSTICS (Hungarian Society of Hemorheology)** Room: Arabella
Chairpersons: L. Bogar / K. Toth

- S9-1 Genetic factors in clinical hemorheology
T. Alexy, R. Wenby and H.J. Meiselman
- S9-2 Regulation of blood flow in venous microvessels. Role of hemodynamic forces and rheological factors
A. Koller
- S9-3 Hemorheological and microcirculatory relations of ischemia-reperfusion in various experimental surgical models
N. Nemeth, K. Peto, A. Furka, M. Szokoly, R. Tamas, E. Brath, I. Furka and I. Miko
- S9-4 New method to determine hematocrit to blood viscosity ratio and virtual optimal hematocrit
P. Kenyeres, M. Rabai, A. Toth and K. Toth
- S9-5 *In vitro* hemorheological and cardioprotective effects of red wine and alcohol free red wine extract
M. Rabai, P. Kenyeres, A. Toth, A. Palfi, E. Bartha, K. Magyar, B. Sumegi and K. Toth

09:00–10:45 **Symposium S10: RHEOLOGY AND COAGULATION** Room: Garsun
Chairpersons: G.-F. von Tempelhoff / G. Pindur

- S10-1 Fibrinolytic and procoagulant activity in septic and haemorrhagic shock
G. Pindur, H. Helling, B. Stephan and J. Schenk
- S10-2 Rheological and hemostasiological aspects of thrombus formation in the left atrial appendage in atrial fibrillation? A new strategy for prevention of cardioembolic stroke
B. Leithäuser, F. Jung and J.W. Park
- S10-3 Blood rheology at term in normal pregnancy and in patients with adverse outcome events
E. Velten
- S10-4 Hemorheological aspects of erythropoiesis-stimulating agents and survival in cancer patients
G.F. von Tempelhoff

- S10-5 Pharmacological effects on mechanical behaviour of neutrophilic granulocytes in neonates
P. Ruef, E. Craciun, F. Altfelder and J. Poeschl
- 10:45–11:15 **Coffee Break**
- 11:15–12:00 **Plenary Lecture L5** Room: Arabella
S. Chien: Novel genomic and fluorescence approaches for hemorheology and microcirculation research
Chairperson: W.H. Reinhart
- 12:00–13:00 **Standing Lunch**
- 12:00–13:00 **Meeting of the Advisory Committee** Room: Roseg
- 13:00–13:45 **Plenary Lecture L6** Room: Arabella
T. Gori: Endothelial functions: Translating theory into human practice
Chairperson: S. Forconi
- 13:45–15:30 **Symposium S11: COMPARATIVE HEMORHEOLOGY** Room: Arabella
Chairpersons: O.K. Baskurt / H.J. Meiselman
- S11-1 Lessons from comparative hemorheology studies
O.K. Baskurt and H.J. Meiselman
- S11-3 Hemorheological profiles of Koala and Echidna
O.K. Baskurt, S. Marshall-Gradisnik, M. Pyne and H.J. Meiselman
- S11-4 Of mice and men: are their endothelial cell functions regulated similarly by shear stress?
G. Nash, K. Glen, N.T. Luu, G.E. Rainger and S. Egginton
- S11-5 Concerns in experimental hemorheology: Gender differences and the effects of gonadectomy on blood rheological parameters in laboratory animals
N. Nemeth, F. Kiss, I. Furka and I. Miko
- 13:45–15:30 **Symposium S12: ROLE OF ACTIVATION MOLECULAR SIGNALING PATHWAYS IN ERYTHROCYTE RHEOLOGIC PROPERTIES** Room: Giarson
Chairpersons: C. Saldanha / I. Tikhomirova
- S12-1 Fibrinogen and erythrocyte membrane interaction: Potential binding sites evaluation
S. De Oliveira, H.S. Rosário, S. Abreu, N.C. Santos and C. Saldanha
- S12-2 Erythrocyte band 3 protein and hemorheological properties
C. Saldanha

- S12-3 Microcirculation and rheological blood properties in circulation disorders
I. Tikhomirova, A. Muravyov, E. Petrochenko, S. Mikhailova, I. Stepanov and A. Malygin
- S12-4 Cross-talk between adenylyl cyclase signaling pathway and Ca²⁺ regulatory mechanism under red blood cell microrheological changes
A. Muravyov, S. Bulaeva, A. Maimistova and I. Tikhomirova

15:30–15:45 **Coffee Break**

15:45–17:15 **Free Communications III: “ENDOTHELIUM AND PLATELETS”** Room: Arabella
Chairpersons: T. Gori / L. Bogar

- FIII-1 Physiological and clinical benefits in increasing blood and plasma viscosity
P. Cabrales and M. Intaglietta
- FIII-2 Rosiglitazone causes endothelial dysfunction in healthy young volunteers while having no benefit on nitrate-induced endothelial dysfunction
T. Gori and K. Perampalades
- FIII-3 Soluble CD40L concentrations in plasma are increased by platelet transfusion in thrombocytopenic patients
F. Wenzel, W. Günther, W. Gruber, A. Baertl, H. Wiedemann, D. Stahl, St. Reinboldt, A.A. Weber and G. Giers
- FIII-4 Alteration of serum thrombopoietin levels in patients with chronic hepatitis C under Interferon therapy
F. Wenzel, W. Gruber and G. Giers
- FIII-5 Comparison of the immediate responses of platelet activation and function to morning and evening resistance exercise
S. Ahmadizad, M. Saleh El-Sayed and D. MacLaren
- FIII-6 Hematocrit and erythrocyte deformability affect ADP platelet reactivity in patients with acute coronary syndromes on dual antiplatelet therapy
E. Cecchi, R. Marcucci, R. Paniccia, B. Bandinelli, S. Valente, C. Giglioli, C. Lazzeri, G.F. Gensini, R. Abbate and L. Mannini

15:45–17:15 **Free Communications IV: “RED CELLS”** Room: GiarSun
Chairpersons: N. Antonova / J.-F. Brun

- FIV-1 Evaluation of mechanical and electrical properties of RBC suspensions. Role of RBC deformability and aggregating agent
N. Antonova, P. Riha and I. Ivanov
- FIV-2 Kinetics of RBC interactions (aggregation) analyzed by functional and geometrical parameters of human blood
I. Ivanov and N. Antonova

- FIV-3 Prediction of RBC aggregability and deformability by whole body bioimpedance measurements analyzed according to Hanai's mixture conductivity theory
J.F. Brun and E. Varlet-Marie
- FIV-4 Effect of temperature on red blood cell aggregation
S. Shin, H.J. Lim, Y.J. Lee and J.H. Nam
- FIV-5 Relationship of recombinant growth hormone and blood rheology in healthy young males
S. Ramos, E. Brenu, R. Christy, S. Rogerson, B. Gray, G. Gass and S. Marshall-Gradisnik
- FIV-6 The effects of coloretally insufflated oxygen-ozone on red blood cell rheology in rabbits
A.S. Artis, G. Sahin and S. Aydogan

17:15 **End of the Conference**