

# 18<sup>th</sup> Meeting of the European Society of Neurosonology and Cerebral Hemodynamics *and* 3<sup>rd</sup> Meeting of Cerebral Autoregulation Network

24 - 27 May 2013 | Porto, Portugal

Friday 24	<p>Autoregulation Meeting (Room 3 Rios) Session I: Challenges and progress in measuring autoregulation Session II: New insights into the physiology and pathology of autoregulation Lunch and Poster session Session III: Clinical applications of autoregulation assessment Discussion of bootstrap projects</p> <p>Tutorials (Rooms Corgo and Tãmega) Basic Tutorial: Theory Basic Tutorial: Practical Demonstration Basic Tutorial: Hands-on Lunch Advanced Tutorial: Theory Advanced Tutorial: Practical Demonstrations</p> <p>International certification examination in neurosonology: theory (Room Corgo)</p> <p>Informal social event (dinner in a beach restaurant)</p>
Saturday 25	<p>International certification examination in neurosonology: practical (Room Tãmega)</p> <p>Teaching Symposium on Autoregulation (Room Porto)</p> <p>Multimodal monitoring of the neurocritical care patient (Room Porto)</p> <p>Welcome ceremony (Room Porto)</p> <p>Lunch and NSRG executive committee meeting (Rest. Madrugã; Room Minho/Lima)</p> <p>Session I: Atherosclerotic risk assessment (Room Porto) Session II: Functional ultrasonography (Room Porto) Session III: Cerebral hemodynamics (Room Porto)</p> <p>Poster session I (Foyer)</p> <p>Welcome Reception (Port Wine cellars)</p>
Sunday 26	<p>Session IV: Ultrasonography in acute stroke management (Room Porto) Session V: Intracranial pathology (Room Porto) Session VI: Heart and brain I (Room Porto)</p> <p>In memoriam Prof Furuhashi (Room Porto)</p> <p>Lunch and ESNCH executive committee meeting (Rest. Madrugã; Room Minho/Lima)</p> <p>Session VII: Heart and brain II (Room Porto)</p> <p>Poster session II (Foyer) Selected poster presentation (Room Porto)</p> <p>General assembly of the European Society of Neurosonology and Cerebral Hemodynamics (Room Porto)</p> <p>Gala Dinner and awards (Boat in River Douro)</p>
Monday 27	<p>(Room Porto)</p> <p>Session VIII: Ultrasound of cerebral parenchyma, peripheral nerves and muscles Session IX: Cervical and cerebral venous ultrasonography Session X: Pitfalls and interesting cases in neurosonology - interactive session</p> <p>Highlights of the Meeting</p> <p>Closing Ceremony &amp; Invitation to the 19th ESNCH Meeting in 2014</p>

## FRIDAY, 24<sup>th</sup> of May 2013

8:00 – Reception desk opening (Foyer of Floor 0)

8:30–19:00 Exhibition (Room Douro)

### 3rd Meeting of Cerebral Autoregulation Network (Room 3 Rios)

9:00-9:10 Opening by D. Simpson, UK, and E. Azevedo, Portugal

9:10 – 10:40 Session I: Challenges and progress in measuring autoregulation

(L1) Cerebral autoregulation challenges  
*V. Novak, USA*

#### Oral presentations:

(O1) Convergent cross mapping: a promising technique for future cerebral autoregulation estimation

*L. Heskamp, A. Meel-van den Abeelen, E. Katsogridakis, R. Panerai, D. Simpson, J. Lagro, J. Claassen, The Netherlands and UK*

(O2) Between-centre variability in transfer function analysis, a widely used method for linear quantification of the dynamic pressure-flow relation: the CARNet study

*A. Meel-van den Abeelen and J. Claassen on behalf of the CARnet bootstrap network, The Netherlands*

(O3) Can Subcomponents Analysis Help With the Interpretation of the CBFv Response to Neural Activation After Acute Ischaemic Stroke?

*A. Salinet, T. Robinson, R. Panerai, U.K.*

(O4) Random steps in lower-body-negative pressure to augment blood pressure variability in the measurement of cerebral autoregulation,

*D.M. Simpson, A.A. Birch, H. Kouchakpour, H. Lea-Banks, R.B. Panerai, U.K.*

10:40 – 11:10 Coffee break (Room Douro)

11:10 – 12:40 Session II: New insights into the physiology and pathology of autoregulation

(L2) New insights into the physiology and pathology of autoregulation  
*Y.C. Tzeng, New Zealand*

#### Oral presentations:

(O5) Non linear analysis does show impaired cerebral autoregulation in human experimental endotoxemia

*L. Heskamp, A. Meel-van den Abeelen, J. Lagro, L. van Eijk, C. Hoedemaekers, J. Claassen, The Netherlands*

(O6) Association of cerebral blood flow variability and cerebral tissue oxygenation with tolerance to central hypovolemia

*C. Rickards, V. Kay, M. George, K. Ryan, C. Hinojosa-Laborde, V. Convertino, USA*

(O7) Improving the physiological interpretation of cerebral critical closing pressure

*C. Puppò, J. Camacho, G.V. Varsos, B. Yelicich, H. Gómez, A. Biestro, M. Czosnyka, Uruguay, Spain and UK*

(O8) Effects of high altitude on dynamic cerebral autoregulation

*J. Smirl, N. Lewis, S. Lucas, G. duManior, N. Sherpa, K. Smith, P. Ainslie, Canada and New Zealand*

12:40 – 14:30 Lunch and poster session (Living of Food Court; Foyer of Floor 1)

(P1) TCARNet: a pathway to translating cerebral autoregulation research into patient benefit

*V. Novak, D.M. Simpson, M. Czosnyka, J.Pachter, J. Ottesen, M. Günther, K. Hu, A. De Gaetano, I. Piper, M. Shaw, A. van Ravestijn, J. Claassen, U.S.A., U.K., Denmark, Germany, Italy, The Netherlands*

(P2) Doppler flow velocity and ICP: Responses to short-term mild hypocapnia help to assess the intracranial pressure-volume relationship after head injury

*C. Haubrich, L.A. Steiner, R.R.Diehl, M. Kasprowicz, P. Smielewski, J.D. Pickard, M. Czosnyka, U.K., Switzerland, Germany and Poland*

(P3) Differences in Cerebral Autoregulation between Arterial Beds is Not Reflected in CO<sub>2</sub> Reactivity

*J. M. Serrador, M. Blatt, A. Acosta, B. Ghobreal and M.J. Falvo, U.S.A.*

(P4) Correlation of TCD blood flow velocity and ICP as a new index of cerebral autoregulation. Do we need it?

*M. Czosnyka, P. Lewis, P. Smielewski, J.D. Pickard, U.K.*

(P5) Cerebrovascular time constant in carotid artery occlusive disease

*M. Kasprowicz, P. Smielewski, J.D. Pickard and M. Czosnyka, U.K.*

(P6) Cerebral blood flow is reduced in the vascular territory of ischemic stroke in the first 24 hours

*J. M. Serrador, P. Castro, I. Rocha, M. Blatt, B. Ghobreal, F. Sorond, E. Azevedo, U.S.A. and Portugal*

(P7) Blast Exposure is Associated with Impaired Cerebral Blood Flow Regulation in US Veterans  
*J. M. Serrador, M. Blatt, A. Acosta, B. Ghobreal and M.J. Falvo, U.S.A. and Portugal*

**14:30 - 16:00 Session III: Clinical applications of autoregulation assessment**

(L3) Clinical applications of autoregulation assessment  
*J. Serrador, USA*

**Oral presentations:**

(O9) Cerebral autoregulation in hypertensive elderly

*L. Wang, A. Meel-van den Abeelen, C. Slump, A. van Beek, J. Sijbesma, M. Oudegeest-Sander, J. Lagro, J. Claassen, The Netherlands*

(O10) Cerebral autoregulation indices are not significantly different between the 'on' and 'off' states in idiopathic Parkinson's disease

*V. Haunton, N. Lo, R. Panerai, T. Robinson, U.K.*

(O11) Dynamic Cerebral Autoregulation Assessed by Magnetic Resonance Imaging and Transcranial Doppler: a Comparative Study in Acute Ischaemic Stroke

*N.P. Saeed, M.A. Horsfield, J. L. Jara, R.B. Panerai, T.G. Robinson, U.K.*

(O12) Prx - a tool to evaluate autoregulation and decide the optimal CPP management at bedside in a neurocritical care unit

*C. Dias, E. Pereira, A. Cerejo, J.A. Paiva, M. Czosnyka, Portugal and U.K.*

16:00 – 16:30 **Coffee Break (Room Douro)**

16:30 – 18:00 **Discussion of bootstrap projects**

19:30 **Informal social event**

**18th Meeting of European Society of Neurosonology and Cerebral Hemodynamics**

8:30–13:00 **Basic Tutorial** (Rooms Corgo and Tâmega)

Chairperson: E. Bartels, Germany, and J. Sargento-Freitas, Portugal

8:30–10:00 **Basic Tutorial: Theory** (Room Corgo)

(T1) Basic Ultrasound Principles – *V. Oliveira, Portugal*

(T2) Ultrasonography of Carotid Stenosis – *J. Klingelhöfer, Germany*

(T3) Clinical impact of IMT measurement – *M. Rodrigues, Portugal*

(T4) Ultrasonography of vertebral arteries – *G.M. von Reutern, Germany*

(T5) Non-Atherosclerotic Cervical Arterial Disease – *G. Baltgaile, Latvia*

(T6) Transcranial Doppler/Duplex ultrasonography – *E. Bartels, Germany*

10:00–10:20 **Basic Tutorial: Practical Demonstration of extracranial and intracranial ultrasound evaluation** -  
*E. Bartels, Germany*

10:20–10:50 **Coffee Break (Room Douro)**

10:50-13:00 **Basic Tutorial: Hands-on** (25 min rotations in groups) (Room Tâmega)

(Group 1) Cervical carotid artery examination – *G. Baltgaile, Latvia*

(Group 2) Cervical vertebral artery examination – *S. Piñeiro, Spain*

(Group 3) Transcranial Duplex Sonography – *J. Sargento-Freitas, Portugal*

(Group 4) Transcranial Doppler diagnostic – *M. Rubiera, Spain*

(Group 5) Transcranial Doppler monitoring – *P. Castro, Portugal*

**13:00-14:00 Lunch (Living of Food Court)**

14:00–18:00 **Advanced Tutorial**

Chairperson: E. Vicenzini, Italy, and P. Castro, Portugal

14:00-15:30 **Advanced Tutorial: Theory** (Room Corgo)

(T7) Transcranial Imaging Planes - advanced approach using fusion imaging – *S. Schreiber, Germany*

(T8) Sonothrombolysis and ultrasound monitoring in acute stroke interventions – *M. Rubiera, Spain*

(T9) Contrast agents: plaque risk and cerebral perfusion – *R. Kern, Germany*

(T10) Microemboli detection in different settings – *D. Russell, Norway*

(T11) Extracranial and Transcranial venous evaluation – *J. Valdueza, Germany*

(T12) Cerebral Parenchyma Ultrasound Imaging – *U. Walter, Germany*

15:30–15:50 **Coffee Break (Room Douro)**

15:50–18:00 **Advanced Tutorial: Practical Demonstrations** (25 min rotations in groups) (Room Tâmega)  
(Group 1) Functional Transcranial Doppler studies – *M. Reinhard, Germany*  
(Group 2) Plaque perfusion and other contrast uses in ultrasonography – *E. Vicenzini, Italy*  
(Group 3) Cardiac shunts and microemboli detection – *M. Diomedì, Italy*  
(Group 4) Extracranial and Transcranial venous evaluation – *J. Valdueza, Germany*  
(Group 5) Ultrasound Imaging of the Brain and Eye – *U. Walter, Germany and M. Siebler, Germany*

**16:00–18:00 International certification examination in neurosonology: theory (Room Corgo)**  
E. Bartels, Germany, and G.M. von Reutern, Germany

19:30 **Informal social event (Restaurant on the Beach)**

## **SATURDAY, 25<sup>th</sup> of May 2013**

8:00 – **Reception desk opening (Foyer of Floor 0)**

8:30–19:00 **Exhibition (Room Douro)**

8:30–10:30 **International certification examination in neurosonology: practical (Room Tâmega)**  
E. Bartels, Germany, and G.M. von Reutern, Germany

8:30–9:30 – **Teaching Symposium on Autoregulation (Room Porto)**  
*Chairperson: V. Novak, USA*  
(TS1) Multimodal Pressure-Flow Analysis to Assess Dynamic Cerebral Autoregulation  
*A. Yang, Taiwan*

9:30–10:00 **Coffee break (Room Douro)**

10:00 – 11:30 **Multimodal monitoring of the neurocritical care patient** – Joint Symposium of ESNCH and CARnet (**Room Porto**)  
*Chairpersons: R. Aaslid, Switzerland and R. Panerai, UK*

(L4) Non-invasive assessment of intracranial pressure dynamics - *R. Aaslid, Switzerland*  
(L5) Cerebral autoregulation measurement - *M. Czosnyka, UK*  
(L6) Electroencephalography role in neurocritical care - *F. Sales, Portugal*  
(L7) Multimodal monitoring in neurocritical care practice - *C. Dias, Portugal*  
Discussion

11:30–12:30 **Welcome ceremony (Room Porto)**  
*Chairpersons: E. Azevedo, Portugal and V. Oliveira, Portugal*

11:30–11:40  
Greetings from the Portuguese Society of Neurosonology - *E. Azevedo, Portugal and V. Oliveira, Portugal*  
Greetings from the European Society of Neurosonology and Cerebral Hemodynamics - *L. Csiba, Hungary, President of ESNCH and D. Russell, Norway, Founding President of the ESNCH*  
Greetings from the Cerebral Autoregulation Network - *David Simpson, Chairman of the CARNet, UK*

11:40–12:00 – (L8) Egas Moniz and cerebral hemodynamics: the man behind the Nobel Prize – *V. Oliveira, Portugal*  
12:00–12:20 - (L9) Aging our arteries. A story about ADAM and EVA – *E.B. Ringelstein, Germany*

12:20–12:30 - Musical moment – Fado by the medical students of University of Porto

12:30–13:30 – **Lunch break and NSRG EC meeting** (Restaurant Madrugã; Room Minho/Lima)

13:30–15:20 **Session I: Atherosclerotic risk assessment (Room Porto)**  
*Chairpersons: M. Kaps, Germany and J. Molto, Spain*

(L10) Can we identify the unstable carotid artery plaque? – *D. Russell, Norway*  
(L11) Extra and intracranial ultrasound: risk assessment and pharmacological interventions – *L. Csiba, Hungary*  
(L12) Is there a clinical value of plaque perfusion imaging? – *H. Poppert, Germany*

### **Oral presentations:**

(O13) Screening of cerebrovascular diseases in a stroke prevention centers in Latvia  
*G. Baltgaile, T. Timofejeva, A. Raita, Ž. Kovaldina, Latvia*

- (O14) Dynamic variations in the ultrasound greyscale median of carotid artery plaques  
*B. Kanber, TC. Hartshorne, M. Horsfield, A. Naylor, TG. Robinson, KV. Ramnarine, U.K.*
- (O15) In-stent restenosis following carotid artery stenting: Assessment by carotid duplex ultrasonography.  
*T. Rodrigues, J. Domingos, M. Milheiro, R. Taipa, J. Pereira, V. Alves, P. Pinto, C. Correia, J. Xavier, G. Lopes, Portugal*
- (O16) Inter-individual variations in wall shear stress distributions at the carotid artery bifurcation  
*L. Sousa, C. Castro, C. António, M. Ferreira, R. Santos, P. Castro, E. Azevedo, Portugal*
- (O17) Quantitative assessment of carotid plaque surface irregularities using ultrasound  
*B. Kanber, T. Hartshorne, M. Horsfield, A. Naylor, T. Robinson, K. Ramnarine, U.K.*

**15:20–15:50 Coffee Break (Room Douro)**

**15:50-16:50 Session II: Functional ultrasonography (Room Porto)**

*Chairpersons:* E. Azevedo, Portugal, and L. Csiba, Hungary

(L13) Functional Ultrasound Imaging of Brain Activity: from small animal imaging to clinical applications-  
*M. Tanter, France*

(L14) Clinical applications of Functional Transcranial Doppler – *B. Rosengarten, Germany*

**Oral presentations:**

(O18) Can neurovascular coupling predict the risk of preeclampsia in pregnant women?

*M. Reinhard, R. Ehmann, E. Ehlers, A. Allignol, S. Mayer, B. Gabriel, H. Prömpeler, W.G. Janzarik, Germany*

(O19) Non-Steroid anti-inflammatory drugs influence the neurovascular coupling

*K. Szabó, L. Oláh, B. Rosengarten, L. Csiba, Hungary and Germany*

**16:50-18:00 Session III: Cerebral hemodynamics (Room Porto)**

*Chairpersons:* R. Vaz, Portugal, and Z. Garami, USA

(L15) Cerebral hemodynamics and the aging brain – *F. Sorond, USA*

(L16) Why space flight is like ageing: the vestibular-brain blood flow link– *J. Serrador, USA*

**Oral presentations:**

(O20) Independent progression of cerebral and skin microcirculatory dysfunction in type 1 diabetes mellitus – preliminary report.

*G.M. Kozera, J. Neubauer-Geryk, B. Wolnik, S. Szczyrba, W.M. Nyka, L. Bieniaszewski, Poland*

(O21) Reduced pressure reactivity is related to lethal outcome in brain injured patients

*B. Schmidt, J.J. Schwarze, M. Weinhold, M. Czosnyka, J. Klingelhöfer, Germany and U.K.*

(O22) Relationship between white matter lesions on magnetic resonance imaging and cerebral hemodynamics measured by transcranial color flow imaging

*H. Mitsumura, K. Sakuta, R. Sengoku, Y. Kono, T. Kamiyama, H. Furuhashi, Y. Iguchi, Japan*

**18:00-19:00 – Poster Session I (Foyer of Floor 0 and 1)**

**Poster sessions I-1 to I-6**

**Poster session I-1 : Extracranial arterial disease 1**

*Chairpersons:* G.M.von Reutern, Germany, and M. Rodrigues, Portugal

(P8) Carotid intima-media thickness in rheumatoid arthritis

*T. Lepic, G. Ristic, D. Veljancic, B. Labovic, Z. Krsmanovic, M. Lepic, B. Glisic, M. Petronijevic, D. Stefanovic, R. Raicevic, Serbia*

(P9) APOE gene polymorphism and symptomatic carotid artery disease - An Egyptian study

*S. El-Jaafary, S. Ahmed, M. Fathy, F. Abd-Allah, Egypt*

(P10) Arterial stiffness of the internal carotid artery does not distinguish patients with stable unruptured aneurysms from normal controls

*F. Perren, P. Reymond, E. Fonck, D. Rüfenacht, N. Stergiopoulos, Switzerland*

(P11) Assessing Performance of Shear Wave Elastography using Carotid Artery Stenosis Phantoms.

*J. Garrard, K. Dexter, S. Nduwayo, T. Hartshorne, A. Naylor, T. Robinson and K. Ramnarine, U.K.*

(P12) Carotid atherosclerosis and metabolic syndrome

*A. Arsovska, Z. Arsovski, A. Popovski, S. Popovska, Macedonia*

(P13) Assessment of the unstable carotid plaque using fluorine-18-labelled fluorodeoxyglucose (FDG) PET

*K. Skagen, K. Johnsrud, M. Skjelland, H. Scott, A. Skretting, J. Fjeld, D. Russel, Norway*

(P14) Complications and Restenosis after carotid endarterectomy, outcomes of a Portuguese centre

*J. Meireles, C. Ferreira, R. Santos, E. Azevedo, Portugal*

- (P15) Evaluating the effect of carotid endarterectomy on the cognitive functions of the patients having a carotid stenosis more severe than 70%  
*A. Frendl, A. Burainé Bojtor, L. Kardos, K. R. Kovács, Borók Józsefné, S. Olvasztó, K. Litauszky, F. Bodnár MD, L. Csiba, Hungary*
- (P16) Intima-media thickness among Mediterranean countries: inter-percentile comparison  
*L. Pereira, M. Biscaia, R. Guerreiro, I. Palma, M. Rodrigues, Portugal*
- (P17) Carotid stenosis in combination with other factors in the development of stroke  
*B. Živadinovič, Serbia*
- (P18) Characterization of carotid disease: Carotid Ultrasound VS Carotid Angiography  
*J. Chin, A. Camacho, P. Guilherme, A. Silva, A. Neves, N. Tavares, J. Amado, S. Marto, V. Brandão, I. Jesus, Portugal*
- (P19) Shear Wave Elastography vs. Grey-Scale Median in the Assessment of Carotid Artery Disease: A Comparison with Histology  
*J. Garrard, B. Kanber, S. Nduwayo, T. Hartshorne, K. West, D. Moore, A. Naylor, T. Robinson and K. Ramnarine, U.K.*

### Poster session I-2: Cerebral vasoreactivity

*Chairpersons:* R. Panerai, UK, and M. Reinhard, Germany

- (P20) The ratio of the dominant hemisphere neuropsychological assessment and indicators of cerebral blood flow  
*E. Lysenko, Y. Mikadze, A. Shakhovich, S. Abuzaid, Russia*
- (P21) A Novel Cerebral Flow Monitor for Detecting Autoregulation - Animal Study  
*M. Kamar, A. Nini, I. Breskin, A. Ron, L. Barkan, Z. Silman, M. Balberg, Israel*
- (P22) Cerebral autoregulation assessment in Basilar artery stenosis  
*Xip. Gong, P. Dong, Pand. Zhang, Xingq. Zhao, Yongj. Wang, China*
- (P23) Cerebral perfusion pressure noninvasively in severe head injury.  
*M.J. Domínguez, A. Sánchez, Spain*
- (P24) Cerebrovascular reactivity to L-arginine in ischemic leukoaraiosis  
*B. Žvan, M. Zupan, M. Zaletel, J. Pretnar- Oblak, Slovenia*
- (P25) Continuous monitoring of vertebrobasilar hemodynamics utilizing TCDS transducer holder Sonopod during postural changes  
*T. Shiogai, M. Yamamoto, Y. Arima, D. Yamasaka, K. Yoshikawa, T. Mizuno, M. Nakagawa, Japan*
- (P26) Dynamic cerebral autoregulation changes during sub-maximal handgrip maneuver  
*Nogueira RC, Bor-Seng-Shu E, Santos MR, Negrão CE, Teixeira MJ and Panerai R, Brazil*
- (P27) Ultrasonographic study in Chronic migraine and relationship with endothelial damage biomarkers  
*V. González Quintanilla, A. Rojo López, A. González Suarez, M. Toriello, S. Gutiérrez González, R. Viadero, J. Fernández Fernández, EJ. Palacio, M. Rebollo, J. Castillo, A. Oterino, Spain*
- (P28) Usefulness of Ultrasonology for monitoring the posterior reversible encephalopathy syndrome  
*P. Lochner, C. Mader, R. Nardone, F. Tezzon, Francesco Brigo, Giovanni Malferrari, Maria Luisa Zedde, Italy*
- (P29) The correlation between attention, movement coordination, cerebral hemodynamics and ethanol concentration on healthy persons  
*M. Orosz, K.R. Kovacs, G. Hofgart, L. Kardos, L. Csiba, Hungary*

### Poster session I-3: New technologies

*Chairpersons:* T. Shiogai, Japan, and V. Cruz, Portugal

- (P30) Clinical assessment of innovative intracranial pressure and volume wave monitoring system  
*A. Ragauskas, V. Petkus, R. Chomskis, R. Ferenets, P.K. Eide, A. G. Sorteberg, Lithuania, Estonia and Norway*
- (P31) Innovative method of cerebrovascular autoregulation monitoring without ABP  
*V. Petkus, A. Ragauskas, A. Preiksaitis, S. Rocka, R. Chomskis, L. Bartusis, Lithuania*
- (P32) Computer simulation of the cardiovascular system  
*A. Santos, L. Sousa, J. Tavares, R. Santos, P. Castro, E. Azevedo, Portugal*
- (P33) Monitoring changes in cerebral blood flow using ultrasound tagged near infrared spectroscopy – A comparative study to 133Xe SPECT  
*H.W. Schytz, S. Guo, L.T. Jensen, M. Kamar, A. Nini, D.R. Gress, M. Ashina, Denmark, Israel and U.S.A.*
- (P34) Web system for medical history management and advanced data analysis  
*N. Barreira, S. G. Vázquez, C. Ferreira, E. Azevedo, J. Rouco, R. Rocha, Aurélio Campilho, Spain and Portugal*
- (P35) Computational simulation of the movement of solids and gasses in the cerebral arteries.  
*D. Marshall, E. Chung, J. Hague, M. Horsfield, U.K.*
- (P36) Carotid artery bifurcation modelling from patient CT angiography and ultrasound technics  
*A. Santos, J. Tavares, L. Sousa, C. Castro, C. António, R. Santos, P. Castro, E. Azevedo, Portugal*
- (P37) Carotid flow predictions based on artificial neural network and Doppler signal  
*C. António, C. Castro, L. Sousa, R. Santos, P. Castro, E. Azevedo, Portugal*

- (P38) Hemodynamics in human carotid bifurcation based on Doppler  
*L. Sousa, C. Castro, C. António, F. Sousa, R. Santos, P. Castro, E. Azevedo, Portugal*
- (P39) Assessment of the unstable carotid plaque using 3T MRI  
*K. Skagen, M. Skjelland, Scott 2, P.K. Hol, D. Russel, Norway*
- (P40) Double inversion recovery imaging of cortical damage in intracranial atherosclerosis  
*F. Farina, A. Palmieri, M. Atzori, F. Viaro, M. Calabrese, P. Gallo, G. Meneghetti, C. Baracchini, Italy*

#### **Poster session I-4: Case Reports**

*Chairpersons:* N. Bornstein, Israel, and M. Rubiera, Spain,

- (P41) Arterial thrombus and stroke in a patient with Crohn's Disease  
*C. Duque, F. Silva, J. Sargento-Freitas, P. Freire, A. Gonçalves, M. Fonseca, G. Santo, L. Cunha, Portugal*
- (P42) Cerebral Embolic Activity in a Patient during Acute Crisis of Takayasu's Arteritis  
*R.C. Nogueira, E. Bor-Seng-Shu, E. Santos, M.J. Teixeira, Brazil*
- (P43) Osler-Weber-Rendu disease with cervical – intracranial and pulmonary arteriovenous malformations: successful management of transient ischemic attacks  
*J. Valaikiene, D. Jatuzis, Lithuania*
- (P44) Trigeminal neuralgia and TIAs in a patient with elongation and ectasia of the basilar artery  
*E. Vavrek, Bulgaria*
- (P45) Extracranial color coded duplex sonography in a case with recurrent intra-cerebral hematoma: is it a useful tool?  
*F. Abd-Allah, A. Esmail, A. Hegazy, Egypt*
- (P46) Mild sensory aphasia after a stroke in the right hemisphere in a right-handed man suffering stroke  
*E. Vavrek, N. Nicheva-Vavrek, E. Vassileva, Bulgaria*
- (P47) The role of transcranial Doppler in reversible cerebral vasospasm syndrome – a case report.  
*R.C. Nogueira, L. Peraza, M. de Oliveira, K. James, E. Bor-Seng-Shu, M.J. Teixeira, Brazil*
- (P48) Aortic dissection cause of ischemic stroke  
*H. Nicolae, A. Popescu, G. Cioara, C. Panea, Romania*
- (P49) Bilateral internal carotid artery dissection in Behcet's disease patient; A case report  
*T. Mukai, N. Hosomi, A. Segawa, N. Kinoshita, J. Kitamura, S. Aoki, H. Ueno, K. Ochi, T. Yamawaki, M. Matsumoto, Japan*
- (P50) Pulmonary A-Vm closure by amplatzer device  
*B. Zamani, M. Rohani, S. Adibeig, A. ghofraniha, Iran*
- (P51) Carotid A. Dissection with floating clot after pulse therapy for optic neuritis  
*B. Zamani, Iran*

#### **Poster session I-5: Eye, Muscle and Veins**

*Chairpersons:* M. Del Sette, Italy, and M. Manita, Portugal

- (P52) Orbital sonography in subarachnoid hemorrhage  
*J. Bäuerle, N. Gross, K.J. Buttler, W. Lagrèze, M. Reinhard, Germany*
- (P53) Reproducibility and accuracy of optic nerve sheath diameter assessment using ultrasound compared to magnetic resonance imaging  
*J. Bäuerle, F. Schuchardt, L. Schroeder, K. Egger, M. Weigel, A. Harloff, Germany*
- (P54) Measurement of optic nerve sheath diameter in Egyptian females with Idiopathic Intracranial Hypertension  
*N. Kishk, A. Hassanen, H. Abdelhafez, N. Shalaby, N. Abukresha, M. Elsaed, Egypt*
- (P55) Optical nerve diameter and echogenicity are impaired in demyelinating diseases  
*J. Fernández-Domínguez, R. García-Rodríguez, V. Mateos, Spain*
- (P56) Transorbital echography for assessment of optical nerve damage in patients with multiple sclerosis  
*V. González Quintanilla, A. Rojo López, A. González Suarez, S. Gutiérrez González, M. Toriello, R. Viadero, J. Fernández Fernández, EJ Palacio, M. Rebollo, J. Castillo, A. Oterino, Spain*
- (P57) Space-time ultrasound imaging of calf muscle lesions  
*E. Titianova, S. Karakaneva, I. Tournev, Bulgaria*
- (P58) Transcranial Doppler ultrasonography with jugular vein compression can detect impairment of intracranial compliance  
*R.C. Nogueira, M.F. Machado, F. Paschoal, E. Bor-Seng-Shu, M.J. Teixeira, Brazil*

19.30 Shuttle to Welcome Reception (Port Wine Cellars)

## **SUNDAY, 26 May 2013**

8:00 – Reception desk opening (Foyer of Floor 0)

8:30–19:00 Exhibition (Room Douro)

**09:00–10:10 Session IV: Acute stroke management (Room Porto)**

*Chairpersons:* E. Titianova, Bulgaria, and M. Ribo, Spain

(L17) Peri-interventional Diagnostic and Therapeutic ultrasound – *G. Tsvigoulis, Greece*

(L18) A new paradigm in acute stroke treatment: Should neurologists become neurointerventionalists? – *M. Ribo, Spain*

**Oral presentations:**

(O23) Treatment delay reduces recanalization after IV Thrombolysis in acute stroke

*M. Muchada, M. Rubiera, D. Rodriguez-Luna, J. Pagola, A. Flores, J. Kallas, E. Sanjuan, P. Meler, M. Ribó, J. Alvarez-Sabin, CA Molina, Spain*

(O24) Ischemic Stroke is Associated with Transiently Impaired Autoregulation

*P. Castro, J.M. Serrador, E. Azevedo, I. Rocha, M. Blatt, B. Ghobreal, F. Sorond, Portugal and U.S.A.*

(O25) Transcranial targeting low frequency ultrasound thrombolysis system: in vitro sonothrombolysis experiment and evaluation of blood flow monitoring in human

*J. Shimizu, J. Kubota, K. Ando, Y. Tanifuji, T. Azuma, A. Arai, H. Mitsumura, T. Ogawa, H. Furuhata, Japan*

**10:10–11:20 Session V: Intracranial pathology (Room Porto)**

*Chairpersons:* A. Massaro, Brazil, and J. Carneado, Spain

(L19) Usefulness of Doppler Ultrasound in "vertigo plus"- *JM de Bray, France*

(L20) How to refine the criteria for intracranial stenting after SAMMPRIS? – *L. Wong, Hong-Kong*

**Oral presentations:**

(O26) Prevalence of intracranial atherosclerotic stenosis in Italian stroke patients: the ISIDE study

*C. Baracchini, G.P. Anzola, M. Del Sette, C. Gandolfo, S. Ricci, M. Diomedi, R. Bella, A. Tonon, M. Braga G. Menegheti for the ISIDE Study Group, Italy*

(O27) Recurrence of cerebrovascular events in patients with intracranial atherosclerotic disease

*A. Gouveia, J. Sargento-Freitas, J. Penetra, F. Silva, C. Machado, G. Cordeiro, L. Cunha, Portugal*

(O28) Transcranial Doppler imaging in sickle cell disease children: the “confounding” effect of age and anemia.

*M. Diomedi, I. Zivi, A. Rocco, C. Alfieri, K. Paciaroni, Italy*

**11:20–11:50 Coffee Break (Room Douro)**

**11:50-12:50 Session VI: Heart & Brain I – New approaches for stroke prevention (Room Porto)**

*Chairpersons:* D. Russell, Norway, and E. Ringelstein, Germany

(L21) Atrial fibrillation epidemics: a new era in stroke prevention - *L. Cunha, Portugal*

(L22) Prevention of stroke in atrial fibrillation: a new era on detection devices – *R. Dittrich, Germany*

**Oral presentations:**

(O29) Ultrafast Doppler imaging of blood flow dynamics in the myocardium

*B-F. Osmanski, M. Pernot, G. Montaldo, A. Bel, E. Messas, M. Tanter, France*

(O30) Carotid ultrasound and transesophageal echocardiography - Complementary methods for diagnosing atherosclerosis?

*J. Chin, A. Camacho, P. Guilherme, A. Neves, P. Sousa, V. Marques, P. Gago, N. Tavares, R. Ferrinha, S. Cunha, A. Silva, I. Jesus, Portugal*

**12:50–13:00 In memoriam Prof Furuhata, by T. Shiogai, Japan (Room Porto)**

**13:00-14:10 Lunch Break and ESNCH EC meeting (Restaurant Madrugã; Room Minho/Lima)**

**14:10-15:30 Session VII: Heart & Brain II – Cerebrovascular Monitoring (Room Porto)**

*Chairpersons:* N. Bornstein, Israel, and P. Pinho, Portugal

(L23) Which ultrasound criteria require recanalisation of carotid stenosis before cardiac surgery? – *R. Dittrich, Germany*

(L24) Cerebrovascular risk reduction with TCD monitoring of cardiac and aortic interventions – *Z Garami, USA*

(L25) Predicting Coronary Artery Disease (CAD) in Stroke patients – *N. Bornstein, Israel*

**Oral presentations:**

(O31) Cerebral and systemic hemodynamics in patients with hypertrophic cardiomyopathy and syncope.

*I. Zivi, R. Morgagni, A. Rocco, E. Bonelli, M. Diomedi, Italy*



(O32) The relationship between carotid atherosclerosis and subclinical left ventricle longitudinal dysfunction in asymptomatic subjects with cardiovascular risk factors  
*A-C. Nechita, V. Enache, F. Ciobanu, AM. Stroi, Romania*

15:30–16:30 **Poster Session II (Foyer of Floor 0 and 1)**

**Poster sessions II-1 to II-6**

**Poster session II-1 : Extracranial arterial disease 2**

*Chairpersons: J. Klingelhöfer, Germany, and C. Carmona, Portugal*

(P59) Is plaque neovascularisation detected by contrast enhanced ultrasound associated with symptomatic carotid artery disease?

*D. Artemis., L. Schall, M. Kablau, M.G. Hennerici, T. Riester, R. Kern, Germany*

(P60) Morphological changes of the internal carotid artery and association with vascular risk factors and carotid ischemic stroke

*H. Martins, P. Batista, F. Soares, V. Almeida, A. Pedro, V. Oliveira, Portugal*

(P61) Restenosis after carotid artery stenting: which are the perfect velocity criteria? Example of an ultrasonographic diagnostic protocol

*P. Barros, H. Felgueiras, D. Pinheiro, M. Guerra, V. Gama, M. Veloso, Portugal*

(P62) Internal carotid artery stenosis: validation of Doppler velocimetric criteria

*A. Monteiro, R. Santos, C. Ferreira, A. Costa, E. Azevedo, Portugal*

(P63) Intracranial internal carotid artery dissection: characteristics of early ultrasound diagnosis, follow-up and early predictors of recanalization with ultrasound contrast agents.

*E. Vicenzini, M. Toscano, I. Maestrini, B. Petolicchio, F. Puledda, G.L. Lenzi, V. Di Piero*

(P64) Low ankle brachial index in acute ischemic stroke; Dose APOE gene polymorphism have a role?

*S. El-Jaafary, F. Abd-Allah, M. Fathy, H. Hosny, M. El-Tamawy*

(P65) Neurosonology versus neuroimaging in the diagnosis of cerebrovascular disease: comparison and diagnostic agreement

*A. Tanzi, U. Scoditti, R. Silvano, M. Agosti, C. Zanferrari, Italy*

(P66) The Role of Adhesion Molecules (sICAM and sVCAM) in Atherosclerotic Ischemic Stroke

*N. Kishk, O. Elserafy, H. Hosny, N. Ghanem, S. El-Shafee, M. Nada, R. Shamlol, Egypt*

(P67) Reversal of Ophthalmic Artery flow and severe ipsilateral carotid stenosis

*M. Grilo, A. Monteiro, R. Santos, C. Ferreira, A. Costa, E. Azevedo, Portugal*

(P68) Migraine as a risk factor for cranial artery dissection

*A. Lovrencic-Huzjan, D. Sodec Simicevic, I. Martinic Popovic, M. Bosnar Puretic, V. Vukovic Cvetkovic, V. Basic Kes, Croatia*

(P69) Relationship between blood pressure control and arterial stiffness, carotid artery and retina damages in hypertensive patients with and without type 2 diabetes

*E. Azevedo, S. Penas, C. Ferreira, L. Martins, A. Campilho, J. Polonia, Portugal*

**Poster session II-2: Intracranial vascular and parenchyma pathology**

*Chairpersons: V. Zetola, Brazil and M. Viana-Batista, Portugal*

(P70) Transcranial brain parenchyma sonography in Parkinson's disease with glucocerebrosidase mutations

*M. Mijajlović, N. Kresojevic, S. Perić, A. Pavlović, M. Svetel, M. Janković, V. Dobrić, I. Novaković, M. Lakoćević, V. Kostić, Serbia*

(P71) Transcranial sonography of substantia nigra echogenicity to predict therapy response in idiopathic restless legs syndrome – a prospective study

*F. Doepp, S. Schreiber, P. Grosse, E. Breuer, F. Salih, Germany*

(P72) Transcranial brain sonography findings in neurosarcoidosis

*M. Mijajlović, V. Vučkinić, N. Šterni, J. Videnović, M. Stjepanović, M. Omćikus, S. Filipović, Serbia*

(P73) Transcranial sonography and tilt test in idiopathic REM behaviour disorder: preliminary data

*E. Guaschino, N. Ghiotto, D. Bosone, A. Moglia, Italy*

(P74) Severity of restless legs syndrome is inversely correlated with echogenicity of the substantia nigra in different neurodegenerative movement disorders. a preliminary observation.

*J.L. Pedroso, E. Bor-Seng-Shu, R.C. Nogueira, M.F. Machado, A.C. Felicio, P. Braga-Neto, L.A.*

*Dutra, C.C. de Aquino, H.B. Ferraz, G.F. Do Prado, M.J. Teixeira, O.G. Barsottini, Brazil*

(P75) Sickle cell disease task force - A new concept to improve the number of children evaluated by transcranial Doppler in high prevalent regions - Pilot study in Brasilia, Brazil.

*MC. Lange, VF. Zetola, AC. Leite, C. Low, DL. Gomes, C. Moro, MM. Alves, AR. Massaro to the Brazilian Task Force Group, Brazil*

(P76) Stroke and disability predictors in patients with intracranial atherosclerosis

*A. Palmieri, F. Farina, G. Meneghetti G, C. Baracchini, Italy*

(P77) Vertebrobasilar Insufficiency and Vascular screening: the role of TCD

*V. Zetola, R. Mendes, C. Adriano, A. Mair, M. Lange, A. Caldart, M. Oriques, M. Mocellin, Brazil*

(P78) hsCRP and PAI-1 Level and Its Association with Ischemic Stroke with Underlying Intracranial Stenosis Using TCD for assessment intracranial stenosis at RSUPNCM Jakarta

*S. Harris, I. Aprianti, N. Nengah Rida Ariarini, Indonesia*

- (P79) Neurosonologic study of cerebral vascular anomalies (CVAs)  
*L. Pascazio, C. Chiapparino, P. Iaffaldano, F. Federico, Italy*
- (P80) Transcranial Color Doppler in adult patients with Sickle Cell Disease  
*F.M. Casoni, G. Graziadei, A. Marcon, P. Ridolfi, I. Gandolfi, F. Annoni, M.D. Cappellini, Italy*

### Poster session II-3: Acute stroke

*Chairpersons: M. Siebler, Germany, and M. Veloso, Portugal*

- (P81) Dynamic cerebral autoregulation in acute intracerebral hemorrhage  
*M. Oeinck, F. Neunhöffer, S. Meckel, K.J. Butler, C. Weiller, M. Reinhard*
- (P82) The Norwegian Sonothrombolysis in Acute Stroke study NOR-SASS  
*A. Nacu, CE. Kvistad, U. Waje-Andreassen, H. Naess, L. Thomassen, Norway*
- (P83) Ultrasound-enhanced systemic thrombolysis for acute ischemic stroke  
*R.C. Nogueira, K.A. Norremose, A.N. Esteves, M.L. Oliveira, K.J. Almeida, E. Bor-Seng-Shu, FI Yamamoto, E.F. Evaristo, M.J. Teixeira, Brazil*
- (P84) Early hemodynamic changes post intracranial thrombectomy: a sign of vessel wall injury?  
*JM. Pignat, V. Mendes Pereira, F. Perren, Switzerland*
- (P85) Improvement of transcranial ultrasound uniformity by random modulation  
*O. Saito, H. Furuhashi, Japan*
- (P86) Neurosonological monitoring during thrombolytic therapy: TCCD's role in diagnosis and selection of therapeutic strategies  
*L. Pascazio, C. Chiapparino, P. Iaffaldano, F. Federico, Italy*
- (P87) Sonothrombolysis in Araucanía, Chile: thrombolytic treatment in acute ischemic stroke in a new stroke center  
*R. Rivas, C. Klapp, M.C. Abarca, L. Bustos, M. Manosalva, C. Merino, B. Cid, Chile*
- (P88) The relationship between the degree of cerebral blood flow augmentation by external counterpulsation and clinical outcomes after acute ischemic stroke  
*L. Xiong, W. Hua Lin, X. Yan Chen, T. Leung, Y. Soo, K. Sing Wong, China*

### Poster session II-4: Heart and brain + Peri-interventional

*Chairpersons: K. Niederkorn, Austria, and C. Correia, Portugal*

- (P89) Cerebral Embolisation During Catheter Ablation of Atrial Fibrillation  
*N. Patel, C. Banahan, J. D. Spiers, J. Janus, D.H. Evans, G. A. Ng, E.M.L. Chung, U.K.*
- (P90) Modifying effect of aortic atheroma on ischemic events recurrence in stroke patients with cervical and intracranial steno-occlusive disease  
*L. Pereira, C. Fernandes, M. Rodrigues, Portugal*
- (P91) Segmental left ventricle hypokinesia is associated with embolic signals in transcranial Doppler  
*A. Warsz-Wianecka, A. Lasek-Bal, P. Puz, Z. Kazibutowska, Poland*
- (P92) Perioperative assessment of cerebral autoregulation in patients with arteriovenous malformation  
*V.B. Semenyutin, V.A. Aliev, G.K. Panuntcev, A. Patzak, A.V. Kozlov, Russia*
- (P93) Perioperative assessment of cerebral autoregulation in patients with hydrocephalus  
*V.B. Semenyutin, V.A. Aliev, V.P. Bersnev, A. Patzak, L.V. Rozhchenko, A.V. Kozlov, G.K. Panuntcev, Sh.Sh. Ramazanov, Russia and Germany*
- (P94) An Observational Study of Cerebral Blood Flow Velocity during Hypotensive Epidural Anesthesia  
*A.M. Bombardieri, N. Sharrock, G. Go, J. Drummond, Italy and U.S.A.*
- (P95) Intraoperative ultrasonography for presumed brain metastases: a case series study  
*H. Picarelli, M.L. Oliveira, E. Bor-Seng-Shu, S.P.B. Lima, R.C. Nogueira, E.S. Ribas, A.M. Santos, M.J. Teixeira, Brazil*
- (P96) Searching for a measure on collateral blood flow: multimodal intraoperative monitoring during temporary occlusion in middle cerebral artery aneurysm surgery  
*P.A. Silva, A. Vilarinho, A. Cerejo, Celeste Dias, Rui Vaz, Portugal*
- (P97) Systemic blood flow and intracranial arterial velocities changes in the early postoperative course after cardiac surgery  
*A. Catalán, Sierra R, Diaz R, Spain*
- (P98) TC Doppler and brain tissue oxygen pressure monitoring in cerebral aneurysm surgery  
*A. Vilarinho, P. A. Silva, A. Cerejo, C. Dias, R. Vaz, Portugal*
- (P99) The number and timing of cerebral emboli during cardiac surgery in conjunction with post-operative MRI scans and neuropsychological tests  
*N. Patel, J. Janus, C. Banahan, T. Spyt, D.H. Evans, EML Chung, U.K.*

### Poster session II-5: Cerebral Hemodynamics

*Chairpersons: A. Razumovsky, USA, and D. Simpson, UK*

- (P100) Preterm infant brain mapping of cerebral blood flow indexes using Ultrafast Doppler imaging.  
*C. Demené, M. Pernot, V. Biran, M. Alison, M. Fink, O. Baud, M. Tanter, France*
- (P101) A longitudinal retrospective study on intracranial arterial pulsatility index: its evolution in ten years' time and how it relates to the occurrence of cerebral and systemic ischemic disease.

- M. Suárez Pinilla, L. Benavente Fernández, S. Calleja Puerta, Spain*  
 (P102) Clinical and analytical predictors of intracranial pulsatility in cerebrovascular prevention  
*A. Gouveia, J. Sargento-Freitas, J. Madaleno, J. Penetra, F. Silva, C. Machado, G. Cordeiro, L. Cunha, Portugal*
- (P103) Receiver operating characteristic analysis of noninvasive intracranial pressure measurement methods  
*A. Ragauskas, L. Bartusis, R. Zakelis, G. Daubaris, V. Matijosaitis, K. Petrikonis, D. Rastenyte, Lithuania*
- (P104) Endothelial dysfunction and leukoaraiosis in patients with obstructive sleep apnea syndrome  
*J. Pretnar Oblak, M. Zaletel, A. Resman-Gašperšič, L. Dolenc-Grošelj, B. Žvan, A. Koren, M. Zaletel, Slovenia*
- (P105) Role of endothelial function parameters in evaluation of patients with Fabry disease  
*I. Zavoreo, M.J. Jurašič, L. Orišič, M. Lisak, A. Lovrenčić-Huzjan, V. Bašič Kes, Croatia*
- (P106) Effects of iodinated contrast media on vasospasm due to subarachnoid hemorrhage  
*T. Nikitina, V.B. Semenyutin, V.P. Bersnev, V.A. Aliev, A. Patzak, M. Sendeski, Germany and Russia*
- (P107) Prognostic significance of Cerebral Blood Flow volume in Vascular Aphasia by Duplex Sonography  
*A. Hassanein, N. Kishk, K. Morsi, N. Abokrysha, M. Gerges, Egypt*
- (P108) Evaluation of Cerebral hemodynamics & its impact on cognitive screening test in SLE patients.  
*N. Kishk, A. ELGhonamy, A. Nabeel, M. Farghaly, Y. Zakaria, N. Ramadan, M. Raslan, Egypt*
- (P109) Infratemporal fossa - A window to insonation of internal maxillary and meningeal arteries  
*M. Lepic, T. Lepic, Serbia*
- (P110) Diabetes Mellitus and Intracranial pulsatility index: more than just elevated glucose  
*L. Almendra, J. Sargento-Freitas, J. Madaleno, A. Gouveia, F. Silva, C. Machado, G. Cordeiro, L. Cunha, Portugal*

16:30-17:00 - **Coffee Break (Room Douro)**

17:00-18:00 - **Selected poster presentation (Room Porto)**

*Chairpersons:* M. Sturzenegger, Switzerland and K. Niederkorn, Austria

18:00–19:00 **General Assembly of the European Society of Neurosonology and Cerebral Hemodynamics (ESNCH) (Room Porto)**

19:00-19:30 – **Meeting of the New EC of ESNCH (room Corgo)**

20:00 **Shuttle Bus for Gala Dinner**

21:00 **Gala Dinner and Awards (Boat in River Douro)**

## MONDAY, 27 May 2013

8:00 – **Reception desk opening (Foyer of Floor 0)**

8:30–13:30 **Exhibition (Room Douro)**

9.00-10:10 **Session VIII: Ultrasound of cerebral parenchyma, eye, muscle and nerve (Room Porto)**

*Chairpersons:* G. Meneghetti, Italy and M. Siebler, Germany

(L26) Role of ultrasound in inflammatory and degenerative brain diseases – *U. Walter, Germany*

(L27) Tissue velocity imaging of muscle movements – *M. Siebler, Germany*

### **Oral presentations:**

(O33) Transcranial sonography findings in spinocerebellar ataxia type 3 (Machado-Joseph disease): a cross-sectional study

*J.L. Pedroso, E. Bor-Seng-Shu, R.C. Nogueira, F. Brambilla, A.C. Felicio, P. Braga-Neto, L.A. Dutra, M.J. Teixeira, O.G. Barsottini, Brazil*

(O34) Optic nerve sheath diameter, hypobaric Hypoxia and acute mountain sickness: a prospective color study

*P. Lochner, T. Cappello, G. Hofer, E. Procter, H. Brugger, L. Coppo, G. Strapazzon, Italy*

(O35) The effect of physical characteristics on reference nerve sizes at multiple sites/levels of the arm and neck

*T. Sugimoto, K. Ochi, N. Hosomi, T. Mukai, H. Ueno, T. Nakamura, T. Takahashi, T. Ohtsuki, T. Yamawaki, T. Kohriyama, M. Matsumoto, Japan*

10:10-11:10 **Session IX Cervical and cerebral venous ultrasonography (Room Porto)**

*Chairpersons:* C. Baracchini, Italy, and J. Valdueza, Germany

(L28) Ultrasound in transient global amnesia, is it useful? - *C. Baracchini, Italy*

(L29) CoSMo study results on CCSVI and MS - *M. Del Sette, Italy*

**Oral presentations:**

- (O36) Cerebral venous outflow in children's age. The normal indicators, pathology and diagnostics  
*M. Abramova, I. Stepanova, S. Novoselova, Russia*
- (O37) Scalp veins in outflow from cranium in patients with parasagittal meningiomas  
*V.B. Semenyutin, D.A. Pechiborsch, V.A. Aliev, A. Patzak, G.K. Panuntcev, A.V. Kozlov, Russia and Germany*

11:10–11:30 **Coffee Break (Room Douro)**

11:30–12:30 **Session X: Pitfalls and interesting cases in neurosonology - interactive session (Room Porto)**

*Chairpersons:* C. Kremer, Sweden and L. Olah, Hungary

(O38) A rare case of familiar moyamoya disease presenting with non-aneurysmal subarachnoid hemorrhage (NASAH): hemodynamic features.

*M. Toscano, F. Puledda, G. Guidetti, G.L. Lenzi, V. Di Piero, E. Vicenzini, Italy*

(O39) Severe intracranial involvement in a case of giant cell arteritis

*J. Parra, J. Domingues, J. Sargento-Freitas, R. Pina, F. Silva, G. Cunha, I. Santana, Portugal*

(O40) Arteriovenous malformation in the carotid artery bifurcation as a rare cause of syncope – case report

*D. Sváňková, J. Neumann, F. Charvát, J. Lacman, D. Netuka, P. Bodnárová, Czech Republic*

(O41) Prompt diagnosis of caroticocavernous fistula by color coded sonography

*J. Valaikiene, A. Širvinskas, Lithuania*

(O42) Vertebral artery dissection and acute right cerebellar infarction in patient with coexisting transverse vertebral foramen stenosis

*J. Valaikiene, D. Jatuzis, J. Dementaviciene, Lithuania*

(O43) Bilateral steno-occlusive disease of the middle cerebral artery: a case report with clinical-hemodynamic mismatch

*H. Rocha, R. Santos, P. Castro, A. Bastos-Leite, E. Azevedo, M. Carvalho, Portugal*

12:30–13:00 **Highlights of the Meeting (Room Porto)**

*Chairpersons:* K. Niederkorn, Austria and M. Sturzenegger, Switzerland

13.00–13.30 **Closing Ceremony & Invitation to the 19th ESNCH Meeting in 2014 (Room Porto)**

*Chairpersons:* E. Azevedo and V. Oliveira, Portugal, and E. Vicenzini and M. Diomedì, Italy