# International Research Network on Cerebral Hemodynamic Regulation (CARNet)

## 4th Annual Meeting
San Diego, CA, USA
April 26-30, 2014

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<tr>
<th>Time</th>
<th>Tuesday, April 29</th>
<th>Wednesday April 30</th>
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<td>8-10</td>
<td><strong>Refresher Course on Cerebral Autoregulation</strong>&lt;br&gt;Dr. Jorge Serrador &amp; Dr. Yu-Chieh Tzeng.&lt;br&gt;San Diego Marriott Marquis &amp; Marina, Balboa</td>
<td><strong>Cerebral Autoregulation in Pathological Conditions</strong>&lt;br&gt;Convention Center, Room 20A</td>
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<td><strong>Cerebral Autoregulation, Brain White Matter Lesions and Cognitive Dysfunction in Mild Cognitive Impairment</strong>&lt;br&gt;Dr. Rong Zhang</td>
<td><strong>Extremes in Cerebral Autoregulation: Clinical Experience in Head Trauma Patients</strong>,&lt;br&gt;Dr. Rune Aaslid</td>
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<td><em>The cytokines TNF MCP-1 and CINC-1 mediate diminished dilation of middle cerebral artery after ischemic stroke in rats</em>&lt;br&gt;Z Broskova, D Anthony, Z Bagi</td>
<td><em>Regional cerebral blood flow responses to rapid reductions in blood pressure after high level spinal cord injury: the effect of alpha1-agonist</em>&lt;br&gt;A Phillips, A Krassioukov, P Ainslie, D Warburton</td>
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<td><em>Cerebral blood flow regulation during blood loss compared to lower body negative pressure in humans</em>&lt;br&gt;J Barnes, B Johnson, V Convertino, M Joyner, C Rickards</td>
<td><em>tPA-S481A prevents impairment of cerebrovascular autoregulation by endogenous tPA after traumatic brain injury by upregulating p38 MAPK and inhibiting ET-1</em>&lt;br&gt;W Armstead, L Bohman, J Riley, S Yarovoi, A Higazi, D Cines</td>
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<td>Time</td>
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<td>10:30-12:30</td>
<td><strong>Autonomic and Other Control of the Cerebral Circulation</strong>&lt;br&gt;&lt;br&gt;<strong>Convention Center, Room 25B</strong>&lt;br&gt;&lt;br&gt;<em>Reflex Cerebrovascular Control in Humans: Parsimony Cannot Play Here!</em>&lt;br&gt;D. Kevin Shoemaker&lt;br&gt;&lt;br&gt;<em>Autoregulation, critical closing pressure, and hemorrhage in the brain of the preterm neonate: ontogeny and insights for management strategies</em>&lt;br&gt;D. Ken Brady&lt;br&gt;&lt;br&gt;<em>Increases in sympathetic activity during cold pressor test does not cause cerebral vasoconstriction</em>&lt;br&gt;J. Serrador, M. Blatt, B. Ghobreal, M. Falvo&lt;br&gt;&lt;br&gt;<em>The role of cerebral oxygenation on tolerance to central hypovolemia</em>&lt;br&gt;V. L. Kay, C. A. Rickards&lt;br&gt;&lt;br&gt;<em>Immunohistochemical evidence of a reduced vasodilatory capacity in vertebral arteries in pre-hypertensive Spontaneous Hypertensive Rats (PH-SHR)</em>&lt;br&gt;E. Roloff, S. Kasparov, J. Paton&lt;br&gt;&lt;br&gt;<em>Comparing cerebral blood flow velocity and cerebral blood flow measures between transcranial Doppler ultrasound and phase contrast magnetic resonance imaging during hypercapnia and hypocapnia</em>&lt;br&gt;N. Coverdale, J. Gati, O. Opalevych, A. Perrotta, J. K. Shoemaker</td>
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<td>12:30-2:15</td>
<td><strong>Poster Sessions</strong>&lt;br&gt;&lt;br&gt;<em>Cerebral Autoregulation in Pathological Conditions</em>&lt;br&gt;&lt;br&gt;<em>Cerebral Blood Flow Regulation in Aging</em>&lt;br&gt;&lt;br&gt;<strong>Poster Sessions</strong>&lt;br&gt;&lt;br&gt;<em>Autonomic and Other Control of the Cerebral Circulation</em>&lt;br&gt;&lt;br&gt;<em>Cerebral Autoregulation: The Quandary of Quantification</em></td>
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| 2:30-4:30 | Practical Course on Performing TCD  
San Diego Marriott Marquis & Marina, Balboa | Cerebral Autoregulation: The Quandary of Quantification  
Convention Center, Room 25B  
TCD: What does velocity tell us? The debate over absolute vs relative changes  
Dr. Jorge Serrador  
From models to numbers  
Dr. David Simpson  
The mirage of autoregulation  
Prof. Ronney Panerai  
Resisting the seduction of cerebral autoregulation  
Dr. Yu-Chieh Tzeng  
Nonstationary multivariate modeling of cerebral autoregulation during resting state and hypercapnia  
K Kostoglou, M Poulin, G Mitsis  
Interindividual relationships between blood pressure and cerebral blood flow variability  
T Witter, B MacRae, T O'Donnell, M Berry  
YC Tzeng |}

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<tr>
<th>Time</th>
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| 5-6    | CARNet Bootstrap Meeting  
San Diego Marriott Marquis & Marina, Cardiff | CARNet Business Meeting  
San Diego Marriott Marquis & Marina, Marina Ballroom G  
Clinical research interest groups |
Cerebral Autoregulation in Pathological Conditions

Contribution of voltage-gated potassium channels in cerebrovascular dysfunction associated with a genetic model of ischemic small vessel disease
F Dabertrand, C Kräigaard, A Bonev, J Brayden, A Joutel, M Nelson

The cytokines TNF MCP-1 and CINC-1 mediate diminished dilation of middle cerebral artery after ischemic stroke in rats
Z Broskova, D Anthony, Z Bagi

Sudden Onset of Hearing Loss after Cerebral Ischemia
P Kamat, A Kalani, S Tyagi, N Tyagi

Improving the sensitivity of neurovascular coupling assessment using motor-cognitive paradigms post-stroke
A Salinet, T Robinson, R Panerai

Dynamic cerebral autoregulation is heterogeneous in different subtypes of acute ischemic stroke
Z Ni Guo, J Liu, Y Xing, Y Yang

Brain tissue oxygenation in response to changes in arterial pressure in patients with mild cognitive impairment
J Liu, T Tarumi, B Tseng, C Hill, K Armstrong, L Hynan, T Hodics, R Zhang

Dynamic Cerebral Autoregulation and Tissue Oxygenation in Amnestic Mild Cognitive Impairment
T Tarumi, D Dunsky, M Ayaz, J Liu, C Hill, K Armstrong, K Martin-Cook, M Cullum, R Zhang

Regional cerebral blood flow responses to rapid reductions in blood pressure after high level spinal cord injury: the effect of alpha1-agonist
A Phillips, A Krassioukov, P Ainslie, D Warburton

Cerebral blood flow regulation during blood loss compared to lower body negative pressure in humans
J Barnes, B Johnson, Convertino, M Joyner, C Rickards

Cerebral Autoregulation in Fulminant Hepatic Failure
R Nogueira, F Mendes, M Pacheco, K Lins, M Jacobsen, T Edson, B Seng-Shu

Dynamic cerebral pressure-flow relationships in aging and long-term heart transplant recipients
J Smirl, M Haykowsky, K Marsden, H Jones, M Nelson, P Ainslie

Blunted Cerebrovascular Response to Exogenous Nitric Oxide in POTS
A Del Pozzi, M Medow, J Stewart

tPA-S481A prevents impairment of cerebrovascular autoregulation by endogenous tPA after traumatic brain injury by upregulating p38 MAPK and inhibiting ET-1
Uncoupling of flow-pressure relationships following sport concussion in elite athletes
S Bishop, T Burnett, J Smirl, P Ainslie, P Donkelaar, P Neary

Reduced Vestibular Function in Veterans is Associated with Worse Cerebral Autoregulation
J Serrador, A Acosta, B Ghobreal, M Blatt

Cerebral blood flow regulation is affected immediately following a concussion
J Tosto, M Falvo, L Reyes, M Blatt, B Ghobreal, J Serrador

Two approaches to the Pressure-Volume Relationship after Traumatic Brain Injury using respiratory stimuli
C Haubrich

Post-traumatic stress disorder does not affect cerebrovascular reactivity
J Stojanovic-Radic, L Reyes, B Ghobreal, M Blatt, A Acosta, H Chandler, J Serrador

Autonomic Dysfunction in Veterans with Gulf War Illness
L Reyes, M Falvo, M Blatt, B Ghobreal, A Acosta, J Serrador

Cerebral autoregulation: the quandry of quantification

The effects of transcranial Doppler probe placement on cerebral autoregulation measurements
D de Jong, J Lagro, A van den Abeelen, K Slump, O Meulenbroek, J Claassen

Evaluating the repeatability of measuring CBFV and estimating ARI at the MCA vs ICA
R Nogueira, N Saeed, R Panerai, T Robinson, E Bor-Seng-Shu

Methodological considerations for cerebrovascular reactivity testing and analysis
J Inskip, R Ravensbergen, S O’Connor, V Claydon

The Effect of Different Body Positions on the Assessment of Dynamic Cerebral Autoregulation
J Luis, J Chacon

Influence of dynamic cerebral autoregulation on presyncope in endurance athletes
M Paquette, O Le Blanc, A Gaudreau, P Moreau, A Clément, G Thibault, P Brassard

Middle cerebral artery mean flow velocity changes to non-pharmacologically induced hypertension and hypotension in humans
P Brassard, M Paquette, O Le Blanc, A Gaudreau, P Moreau, A Clément, G Thibault

Are there differences in cerebral autoregulation between small increases or decreases of blood pressure?
D Simpson, A Birch, R Panerai

Quantifying autoregulation from estimated model parameters: an optimization approach
D Simpson, C Berroeta, E Katsogridakis, R Panerai
Comparison of Autoregulatory Indexes on Spontaneous Variations with Linear Support Vector Machines
Max L. Chacon, F Bello, J Jara, R Panerai

Nonstationary multivariate modeling of cerebral autoregulation during resting state and hypercapnia
K Kostoglou, M Poulin, G Mitsis

Interindividual relationships between blood pressure and cerebral blood flow variability
T Witter, B MacRae, T O'Donnell, M Berry, Y Tzeng

Autonomic and other control of the cerebral circulation

Are the upper limits of cerebral autoregulation at gross and microcirculatory levels different? Does nitric oxide (NO) play a role?
E Thompson, A Coney, J Marshall

Comparing cerebral blood flow velocity and cerebral blood flow measures between transcranial Doppler ultrasound and phase contrast magnetic resonance imaging during hypercapnia and hypocapnia
N Coverdale, J Gati, O Opalevych, A Perrotta, J Shoemaker

Influence of cholinergic blockade on the cerebral blood flow response to exercise in humans
I Braz, A Shantsila, A Adlan, N Secher, J Fisher

Effects of physical exertion and heat on cerebrovascular response in professional firefighters
J Neary, M Butz, B Dahlstrom, J Smirl, S Bishop

Blunted increases in vertebral blood flow during L-arginine infusion in patients with hypertension
L Vianna, I Fernandes, T Barbosa, T Amaral, N Rocha, N Secher, A NÂ³brega

Effects of antioxidants on cerebrovascular hemodynamics during moderate and high intensity exercise
G Moralez, D White, P Raven

Oscillatory Cerebral Blood Flow in Postural Tachycardia Syndrome
A Del Pozzi, M Medow, J Stewart

Increases in sympathetic activity during cold pressor test does not cause cerebral vasoconstriction
J Serrador, M Blatt, B Ghobreal, M Falvo

Immunohistochemical evidence of a reduced vasodilatory capacity in vertebrobasilar arteries in pre-hypertensive Spontaneous Hypertensive Rats (PH-SHR)
E Roloff, S Kasparov, J Paton

Spinal cord injury and disruption of extrinsic sympathetic control of cerebral vasculature does not significantly alter cerebrovascular reactivity to carbon dioxide
J Inskip, R Ravensbergen, S O'Connor, V Claydon

Time dynamics of cerebral blood flow during LBNP
M Kasprowicz, M Czosnyka, R Diehl, C Haubrich
APS Cerebral blood flow regulation in aging

Cerebral autoregulation individual variability and white matter hyperintensity
J Liu, B Tseng, M Khan, T Tarumi, C Hill, K Armstrong

Cerebral Hemodynamics in Normal Aging: Associations with Central Hemodynamics and Cerebral Small Vessel Disease
T Tarumi, M Ayaz, J Liu, B Tseng, R Parker, R Jonathan, C Tinajero, W Zaidi, R Zhang

Reduced cerebral autoregulation as the genesis of symptoms in orthostatic intolerance in elderly
M Sanders, A van den Abeelen, C Slump, J Lagro, J Claassen

Age-related differences in carotid and cerebral blood flow regulation
S Kruse, S Ranadive, J Taylor, M Joyner, J Barnes

The impact of aging on cerebral vasomotor reactivity to carbon dioxide
J Riley, T Tarumi, R Parker, K Armstrong, Cynthia Tinajero, R Zhang