



Skeletal muscle: Biology, Pathology, Rehabilitation

Terme Euganee, Padova (Italy), November 14 - 16, 2013

Terme Euganee Conference Hall, Hotel Augustus, Viale Stazione 150 - 35136 Montegrotto Terme, Padova, Italy

Phone +39 049 793 200 - Fax +39 049 793518 - http://www.hotelaugustus.com/english/pages/hotel_augustus.php - E-mail: info@hotelaugustus.com

H. Kern, G. Vrbova, J.C. Jarvis, J.-C. Chachques, S. Masiero, and U. Carraro



Thursday November 14, 2013

Terme Euganee Conference Hall, Hotel Augustus, Montegrotto Terme, Padova, Italy

- 13.00  **Pre-Conference course on functional assessment of seniors CBC SK-AT 2007-13 “Mobility in elderly”: force measurement, balance and functional performance measures** – H. Kern, S. Löfler, Austria; J Cvecka, Slovakia
- 15.00 **Rise2-Italy Workshop: Practical Course on Stimulation of Large and Small Denervated Muscles in SCI and beyond - I**
S. Masiero, U. Carraro, Chairmen
- 15.00 Introduction: Electrical stimulation of denervated muscle in SCI, when and how, H. Kern, Vienna, Austria
- 15.10 Ultra-structural rescue of long-term denervated human muscle by Functional Electrical Stimulation (FES), S. Boncompagni et al. Chieti, Italy
- 15.30 Stimulators and electrodes for large and small denervated muscles. Surface versus implantable devices, W. Mayr, Vienna, Austria, U. Carraro, Padova, Italy
- 15.50 **Practical Course on Stimulation of Large and Small Denervated Muscles in SCI and beyond - II**,
H. Cerrel-Bazo, U. Carraro, Chairmen
- 15.50 FES for large denervated muscles: Comments of patients and practical demonstrations, R. Fiorucci, Città di Castello, Italy
- 16.10 FES for small denervated muscles. Comments of patients and educational case reports, A. Marcante, R. Zanato, S., et al. Padova, Italy
- 16.30  **Partners meeting of the CBC SK-AT 2007-13 “Mobility in elderly” - Outlook 2014-2015** - H. Kern, Chairman
- 18.00 **Workshop “VNS, Facts and Perspectives”, D. D’Avella, W. Mayr, Chairmen**
- 18.00 Performance of electrodes within the nerve cuff tested in vagus nerve stimulation and in vitro, J. Rozman & P. Pečlin, Ljubljana, Slovenia
- 18.30 Vagus nerve stimulation (VNS) and focal cerebral ischemia: a rodent model using an implantable electrical stimulator, D. D’avella, Padova, Italy, J.C. Jarvis, Liverpool, U.K.
- 19.00 Vagus nerve stimulation (VNS): a multi-purpose experimental model in rodents, U. Carraro, V. Vindigni, D. D’avella, Padova, Italy, J.C. Jarvis, Liverpool, UK
- 21.00 **Organizing a perspective EU Horizon 2020 Program: FES4SEF - Functional Electrical Stimulation for Seniors at Early Falls - I**



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Friday November 15, 2013

07.30 Physical activity in warm water

Terme Euganee Conference Hall, Hotel Augustus, Montegrotto Terme, Padova, Italy

- 09.00  **Workshop CBC SK-AT 2007-13 “Mobility in elderly”: Force, Balance and Falls** – H. Kern, F. Prtosi, Chairmen
- 09.00 Mobility rehabilitation in denervation, aging and oncology: Introduction, H. Kern, Vienna, Austria
- 09.15 Histology results in sedentary seniors after 9-week of only 3 times a week Electrical Stimulation, S. Zampieri et al., Padua, Italy
- 09.30 Muscle activity controls the association between Ca^{2+} release units and mitochondria in skeletal fibers, F. Protasi, Chieti
- 10.00 Surface electrical stimulation vs. proprioceptive strength training in enhancement of muscle strength and functional performance in sedentary seniors, J. Cvecka et al., Bratislava, Slovakia
- 10.15 The role of strength for balance in elderly, N. Sarabon, Koper, Slovenia
- 10.30 Improving stair-negotiating ability in older people, C. Maganaris, Liverpool John Moores University, UK
- 11.00  **CBC SK-AT 2007-13 “Mobility in elderly” – Molecular Biology** – H. Kern, M. Sandri, Chairmen
- 11.00 Role of the mitochondrial fission machinery in muscle atrophy and sarcopenia, M. Sandri, Padova, Italy
- 11.30 Insights into the molecular and cellular mechanisms of sarcopenia and into potential therapeutic approaches, A. Musarò, Rome, Italy
- 12.00 ERG1a K^+ channel induces expression of MuRF1, but not MAFbx-Atrogin1 or E3 α -II, E3 Ligases, A. Pond, Carbondale, IL, USA
- 12.20 The genetic association with the variable response to resistance training, R. Erskine, Liverpool John Moores University, UK
- 12.40 Gender differences in the decline of muscle power up to the most advanced age, Gava P, et al., Padova, Italy
- 12.50 **Posters & Cycling Exercise for Senior Sportsmen**
- 14.00 **Reactions of different muscle fibers to activity, denervation and aging – Session I**, G. Vrbova, U. Carraro, Chairmen
- 14.00 Exon skipping as a potential therapy for specific laminopathies, P. Zammit, London, UK
- 14.30 The effects of ageing on mouse satellite cells, J.E. Morgan, London, UK
- 14.50 Regulation of myoblast differentiation and hypertrophy, C. Stewart, Liverpool John Moores University, UK
- 15.10 Hypoxia increases mouse satellite cell clone proliferation maintaining both *in vitro* and *in vivo* heterogeneity and myogenic potential, M. Pozzobon et al., Padova, Italy
- 15.30 Nutrient-gene interactions: manipulations of carbohydrate availability to maximize training adaptations, J. Morton, John Moores University, UK
- 15.50 Exercise, vitamin D and human skeletal muscle: is sarcopenia inevitable?, G. Close, Liverpool John Moores University, UK
- 16.30 **Reactions of different muscle fibers to activity, denervation and aging – Session II**, G. Vrbova, A. Musarò, Chairmen
- 16.30 The effect of innervation on the development of fast twitch and slow tonic muscle fibres, T. Gordon, Toronto, Canada and G. Vrbova, London, U.K.
- 17.00 Mitochondrial functional alterations in aging muscle: cause or effect(or)?, R.T. Hepple, Montreal, Canada
- 17.30 The influence on muscle growth in aged animals and diet mediated starvation by Myostatin, K. Patel, Reading, UK
- 18.00 Bone morphogenetic protein controls muscle mass and dominates over Myostatin signaling, H. Amthor, Paris, France
- 18.30 How and why slow muscle fibers prevail in aging human muscle, S. Mosole, et al., Padova, Italy
- 21.00 **Organizing a perspective EU Horizon 2020 Program: FES4SEF - Functional Electrical Stimulation for Seniors at Early Falls - II**



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Saturday November 16, 2013

07.30 Physical activity in warm water

Terme Euganee Conference Hall, Hotel Augustus, Montegrotto Terme, Padova, Italy

- 09.00 **MED[®]EL Workshop FES of Skeletal Muscles, Session I** – J.C. Jarvis, *Chairman*
09.00 Neuromuscular pathology in equine recurrent laryngeal neuropathy, R.J. Piercy, *London, UK*
09.30 Case selection and effect of functional electrical stimulation on reinnervation in a preclinical laryngeal model, J. Cheetham, *et al., Ithaca, NY, USA*
10.00 Early reinnervation is improved by daily electrical muscle stimulation following nerve injury and immediate repair, M.P. Willand *et al., Toronto, Canada*
10.30 Interest of combining posterior cricoarytenoid muscle reinnervation and functional electrical stimulation in horses with naturally occurring disease, C. Mespoulhès-Rivière, J.-P. Marie, *Maison-Alfort, Rouen, France*
- 11.00 **MED[®]EL Workshop FES of Skeletal Muscles, Session II** – W. Mayr, *Chairman*
11.00 New Vienna/Liverpool implantable stimulator, J.C. Jarvis, *Liverpool, UK*; M. Bijak, H. Lanmueller, M. Haller, E. Unger, *Vienna*; W. Lindenthaler, *Med-El, Innsbruck, Austria*
11.20 An implantable, modular telemetry system for bio-signal recordings in large animals, L. Kneisz, *et al., Vienna, Austria*
11.40 Neuromuscular stimulation training for sedentary elderly, M. Krenn *et al., Vienna, Austria*
12.00 New model systems for activation of muscle in culture, C. Stewart, A. Sharples, *Liverpool, UK*
12.20 Image processing and segmentation in preparation for the simulation of electrical field during Functional Electrical Stimulation of musculus cricoarythenoideus dorsalis, P. Gargiulo *et al., Reykjavik, Iceland*
12.40 Rational selection of activation patterns in electrical stimulation of muscle, J.C. Jarvis, *Liverpool, UK*
- 14.30 **MED[®]EL Workshop FES of Skeletal Muscles, Session III** – Tessa Gordon, Franco Bassetto, *Chairmen*
14.30 The impact of intramuscular-inserted hooked wire electrodes and specific stimulation parameters, D. Arnold *et al., Jena, Germany*
14.50 Measurement of the 3D electrical field distribution with different multiplexed stimulation electrode configurations in a constant pressure ex-vivo model of the equine larynx, S. Otto, *et al. Leipzig, Germany*
15.10 Simulation of the electrical field during Functional Electrical Stimulation of musculus cricoarythenoideus dorsalis – a feasibility study, M. Reichel *et al., Austria*
15.30 EMG biofeedback muscle training with a wireless signal transmission, T. Helgason *et al., Reykjavik, Iceland*
15.50 Electrical Stimulation in neural repair: First experience in Padova. V. Vindigni *et al., Padua, Italy*
- 16.30 **Cell Stemness Capacity and Tissue Reconstruction** - J.-C. Chachques, M. Patruno, *Chairmen*
16.30 Stem cells and tissue engineering for myocardial regeneration and ventricular support, J.-C. Chachques, *Paris, France*
17.00 Bioactive implant development to assist cardiac recovery, C. Semino, C. Castells, *Barcelona, Spain*
17.20 Biomimetic and biofunctionalization approaches in cardiovascular tissue engineering for stem cells differentiation: getting closer to nature, getting closer to patient, C. Spadaccio, *Leuven, Belgium*
17.40 Cardiac progenitor cells: current and future directions for cell therapy, I. Chimenti, G. Frati, *Sapienza, Latina, Italy*
18.00 In vivo application of adult stem cells and platelet rich plasma: recent experiences and future perspective in veterinary orthopaedics, M. Patruno, *Padua, Italy*
18.20 U. Carraro - Arrivederci, Auf Wiedersehen, Aurevoir, Búcsú, Despedida, Poslovite, Sjámt, See You to 2014 Spring PaduaMuscleDays



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POSTERS

Friday November 15, 2013

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12.45 Discussion of Posters, U. Carraro, Chairman

- P 1.** The short-term denervated hemidiaphragm: a mixture of “hypertrophy” and “denervation” features
Carraro U, Mosole S, Zampieri S, Gobbo V, Germinario E, Danieli D
- P 2.** Assessment of muscle fibers, connective tissue and fat, using μ CT data: a feasibility study for meat quality control
Gargiulo P, Rizzi C, Örlýgsson G, Carraro U
- P 3.** Gender differences in the decline of muscle power up to the most advanced age
Gava P, Kern H, Carraro U
- P 4.** Nuclear wandering and nuclear grouping in human and rodent denervated skeletal muscle
Rossini K, Biral D, Zampieri S, Mosole S, Löfler S, Kern H, Carraro U
- P 5.** Scalp Potentials Changes due to Fontanels in an Infant's Head Model
Gargiulo P, Belfiore P, Friðgeirsson E A, Vanhatalo S, Ramon C
- P 6.** Reinnervation of muscle fibers in aging muscle: Indirect immuno-histochemical evidence
Mosole S, Carraro U, Zampieri S, Kern H
- P 7.** FES training protocols for the functional recovery of permanently complete denervated human muscles,
Löfler S, Mayr W, Moedlin M, Burggraf S, Kern H
- P 8.** Myosin isoforms in small and large mammals: SDS PAGE demonstrates co-migration of slow, but not fast MHC
Carraro U, Rizzi C, Rossini K
- P 9.** Ribosomal profiles of denervated muscle
Carraro U, Catani C, Margreth A