

THURSDAY FEBRUARY 19th 2009

07.30 – 08.30 Registration

08.30 – 10.00 **MORNING SESSION**

Chaired by *Prof. C. Perino and Prof. Geoffrey Raisman*

08.30 – 08.40 **Presentation of the Symposium**

G. Brunelli (Brescia, Italy)

08.40 – 09.00 **Making Paraplegics Walk Again**

Klaus Von Wild (Munster, Germany)

09.00 – 09.20 **Report on the research of the
“Foundation for spinal cord lesions”**

Giorgio Brunelli (Brescia, Italy)

09.20 – 09.40 **Experimental strategies to promote spinal cord regeneration
an integrative perspective**

Jan Schwab (Berlin, Germany)

09.40 – 10.00 **Utilization of CD34+, CD133+, pluripotent stem cells
in autologous transplantation for repair of spinal cord injuries**

Ziad AlZoubi, Adeb AlZoubi (Amman, Jordan)

10.00 – 12.40 **Opening Ceremony**

Introduced by Luisa Monini

**The interdisciplinary character of science and institutions
in research, prevention and treatment of diseases
of the nervous system**

Prof.ssa Rita Levi Montalcini Nobel Laureate for Medicine

Welcoming address: Research at Brescia School of Medicine

Sergio Pecorelli

Prevention of spinal cord injuries due to car accidents

Alberto Cavalli

Problems of spinal cord injuries during sport activities

Massimo Bianchini

The role of University in the promotion of prevention

Lorenzo Alessio

Prevention of spinal cord occupational injuries

Carmelo Scarcella

The importance of the Media in the culture of prevention

Claudio Baroni, vice-editor of "Il Giornale di Brescia"

11.40 – 12.40 Magistral Lecture

Total face transplantation:

Medical, Ethical and Social considerations

Maria Siemionow (Cleveland, Ohio, USA)

12.40

Cocktail

14.00 – 17.40 AFTERNOON SESSION

Chaired by *Prof. M. Pizzzi, Prof. Clementi*

– Symposium in the Symposium –
**NEUROBIOLOGY OF SPINAL CORD INJURY
and
INNOVATIVE EXPERIMENTAL APPROACHES**

co-chaired by *Prof. P.F. Spano*

14.00 – 14.45 Plenary Lecture

Axonal regeneration – A retrospective

Albert J. Aguayo (Montreal, Canada)

14.45 – 15.15 Making the match: electrical activity regulates

neurotransmitter specification and receptor selection

N. C. Spitzer (San Diego, California, USA)

15.15 – 15.45 Neurobiology of spinal cord injury

and innovative experimental approaches

A. Privat (Montpellier, France)

15.45 – 16.00 coffee break

16.00 – 16.30 Imaging axonal regeneration and reorganization

F. M. Bareyre (Munich, Germany)

**16.30 – 17.00 Motoneurons function as intraneurons in a bridge
around spinal cord injury**

J. H. Martin (New York, USA)

17.00 – 17.30 Reconnecting skeletal muscle to healthy spinal cord

M. Pizzzi (Brescia, Italy)

17.30 – 17.40 Closing remarks

PierFranco Spano (Brescia, Italy)

SOCIAL PROGRAM (RESERVATION REQUIRED):

- 18.00** Departure of coach to Busseto, near Parma
- 19.30** Organ concert in the Roncole Church, where Giuseppe Verdi learned to play the organ
- 20.30** Typical dinner with “gnocco fritto”, “culatello” and “Fortana”
- 23.00** Back to Brescia

FRIDAY FEBRUARY 20th 2009

08.00 -10.00 **1st MORNING SESSION**

– Symposium in the Symposium –
**PATHOPHYSIOLOGY OF SPINAL CORD INJURY AND
THE ORIGIN OF NEUROLOGICAL PAIN AND OTHER
COMPLICATIONS**

Organized by R. Deumens and G. Taccola

Chaired by E.A. Joosten

- 08.00 – 08.20 **Pathophysiology of spinal cord injury:
hints for therapeutic interventions**
E.A. Joosten (Maastricht, The Netherlands)
- 08.20 – 08.40 **Early functional damage in a new *in vitro* model
of spinal cord injury**
Giuliano Taccola (Udine, Italy)
- 08.40 – 09.00 **The role of haemorrhage after spinal cord injury**
Patrick Losey (Oxford, UK)
- 09.00 – 09.15 **Toll-like receptors regulate intraspinal inflammation
following spinal cord injury**
Kristina A. Kigerl (Ohio, USA)
- 09.15 – 09.30 **Advanced diffusion MRI methods for characterizing
spinal cord lesions**
Julien Cohen-Adad (Paris, France)
- 09.30 – 09.45 **Central pain as a limitation to novel SCI therapeutics?**
Ronald Deumens (Maastricht, The Netherlands)
- 09.45 – 10.00 **Plasticity of the inhibitory synaptic transmission
after spinal cord injury**
Celine Jean-Xavier (Marseille, France)
- 10.00 – 10.15 **coffee break**

10.15 – 13.25 2nd MORNING SESSION

Chaired by *Prof. Anne-Lise Christensen and Prof. Milan Dimitrijevic*

- 10.15 – 10.30 Diffusion sensor imaging of traumatic injury of spinal cord**
Roberto Gasparotti, Francesco Carletti (Brescia, Italy)
- 10.30 – 10.50 Macrophages play an indispensable role in spinal cord repair**
Ravid Shechter, Michal Schwartz (Rehovot, Israel)
- 10.50 – 11.20 Neural Stem Cells for Spinal Cord Repair**
Charles H. Tator (Toronto, Canada)
- 11.20 – 11.40 Eph receptors function as novel pro-apoptotic receptors following CNS injury**
Daniel J. Liebl (Miami, Florida, USA)
- 11.40 – 11.55 Respiratory recovery after high cervical spinal cord contusion and post-traumatic olfactory glia transplantation**
Valery Matarazzo, Patrick Gauthier (Marseille, France)
- 11.55 – 12.25 Repair of spinal cord injury by olfactory ensheathing cells: the pathway hypothesis**
Geoffrey Raisman (London, UK)
- 12.25 – 12.45 Ischemic conditions result in minimal GFAP expression in satellite cells of the dorsal root ganglion**
Krzysztof Siemonow et al. (Cleveland, Ohio, USA)
- 12.45 – 13.05 Astroglial NF-kB: an important regulator of pathological responses in the CNS**
Roberta Brambilla, John Bethea (Miami, Florida USA)
- 13.05 – 13.25 Repair Strategies in Spinal Cord Injury: Manipulating Chronic Inflammation at the Neuro-Vascular Unit by Cell Elimination and Cell Grafting**
Nurit Kalderon (New York, USA)
- 13.25 – 14.25 lunch break**

14.25 – 16.35 1st AFTERNOON SESSION

Chaired by *Dr Bruno Battiston*

**14.25 – 14.35 Mechanisms of blood pressure and heart rate variability:
an insight from low-level paraplegia**

Giampiero Merati, Arsenio Veicsteinas, (Milan, Italy)

**14.35 – 14.45 Methodological issues in quantitative morphology
of the nervous system**

Stefano Geuna, Pierluigi Tos, Bruno Battiston (Turin, Italy)

**14.45 – 14.55 Lack of evidence of a positive effect of systemically
administered methyprednisolone sodium succinate after
acute spinal cord contusion injury in rats**

Stefano Geuna, J.E. Pereira, A.S. Varejão (Turin, Italy)

– Symposium in the Symposium –

Chaired by *Dr Matteo Bertelli*

**14.55 – 15.05 Establishment of research consortia in Italy, opportunity
to build a critical mass of brains and funds?
The experience of the International Association
of Medical Genetics MAGI non profit association**

Matteo Bertelli (Rovereto, Italy)

**15.05 – 15.35 Overview of current stem cell research in amyotrophic
lateral sclerosis**

Letizia Mazzini (Novara, Italy)

**15.35 – 16.05 Molecular pathogenesis of Friedereich ataxia and possible
therapeutic approaches**

Massimo Pandolfo (Bruxelles, Belgium)

16.05 – 16.35 coffee break

16.35 – 19.25 2nd AFTERNOON SESSION

Chaired by *Prof. Vincent Hentz*

16.35 – 16.55 Biomechanics of spinal cord lesions

Fafa Ben-Hatira, Kaouthar Saidane, Abdelfatteb Mrabet (Tunis, Tunisia)

16.55 – 17.15 Trekking the Translational Trail: challenges to the conduct of human spinal cord injury clinical trials

John Steeves (Vancouver, Canada)

17.15 – 17.30 Innovations in spinal trunk control utilizing FES

Harry Hoyer (Cleveland, Ohio, USA)

17.30 – 17.45 Innervation of a paralyzed nerve into denervated motor units, rodent model

Harry Hoyer (Cleveland, Ohio, USA)

17.45 – 18.05 Biomechanical research on tendon transfers in tetraplegia: why progress depends upon collaboration between surgeons and scientists

Vincent Hentz (Stanford, California, USA)

18.05 – 18.25 Evaluation of spasticity in the tetraplegic upper limb: combined video and dynamic EMG recordings

Caroline Leclercq (Paris, France)

18.25 – 18.50 Spinal cord Injury induced immune depression syndrome (SCI-IDS)

Jan Schwab (Berlin, Germany)

SOCIAL PROGRAM (RESERVATION REQUIRED):

19.30 Guided tour of the 1000 Miglia Vintage Car Museum

Dinner on the premises

SATURDAY FEBRUARY 21st 2009

ROOM A

1st MORNING SESSION

Chaired by *Prof. Sergio Cosciani and Dr Michele Spinelli*

- 08.30 – 08.45 **Neurogenic bladder: from treatment of complications to early approach**
A. Tagliabue (Magenta, Italy)
- 08.45 – 09.00 **Possibilities, limits and future perspectives in electrical stimulation of sacral and pudendal nerves**
M. Spinelli (Milano, Italy)
- 09.00 – 09.20 **Surgical treatment of urinary sequelae in neurogenic patients**
C. Simeone (Brescia, Italy)
- 09.20 – 09.40 **Early approach for erectile dysfunction and ejaculation in spinal cord injured patients**
F. Scroppa (Milan, Italy)
- 09.40 – 10.00 **coffee break**

2nd MORNING SESSION

Chaired by *Prof. Gelu Onose and Dr Justin Brown*

- 10.00 – 10.20 **Intra-operative neurophysiology of the injured spinal cord**
Paolo Costa (Torino, Italy)
- 10.20 – 10.40 **The role of repeated rota rod treadmill training on spontaneous coordinate activity of spinal cord injured rats**
Maher Benjaidid (Riyadh, Saudi Arabia)
- 10.40 – 11.00 **Effect of extracorporeal shock wave therapy on spastic hypertonia**
Ernesto Amelio (Verona, Italy)
- 11.00 – 11.20 **Our experience on interferential medium frequency electrostimulation in the treatment of post SCI neurogenic bladder**
Gelu Onose (Bucharest, Romania)
- 11.20 – 11.40 **Diagnosis and addressing lower motor neuron injuries in the SCI patient**
Justin M. Brown (St. Louis, Missouri, USA)

11.40 – 12.10 Long term follow-up results of OEC transplant for patients with chronic spinal cord injury

Hongyun Huang (Beijing, China)

13.00 - 13.30 lunch break

AFTERNOON SESSION

Chaired by *Dr Wise Young and Dr Shaocheng Zang*

13.30 – 13.50 Restoration of sensory and reflex function after SCI by nerve side-to-side anastomosis

Shaocheng Zhang (Shanghai, China)

13.50 – 14.15 Emergency treatment of SCI by means of EPO

Alfredo Gorio (Milano, Italy)

14.15 – 14.45 A new pharmacological treatment for neuropathic pain in spinal cord injury

*G. Ferrara, G. Sanguinetti, R. Capirossi,
L. Landi, M. Menarini (Montecatone, Italy)*

14.45 – 15.15 Beyond brain/spinal cord cell therapies: the neuroplasticity issue

Carlos Lima (Lisbon, Portugal)

15.15 – 15.45 China spinal cord injury network: update

Wise Young (USA)

15.45 – 15.55 Closing remarks

Giorgio Brunelli (Brescia, Italy)

SATURDAY FEBRUARY 21st 2009

ROOM B

MORNING SESSION

08.30 – 13.05

– Symposium in the Symposium –

REHABILITATION IN SPINAL CORD LESIONS

Chaired by *Prof. Alessandro Fiaschi, Prof. Marco Franceschini and Dr Humberto Cerrel Bazo*

08.30 – 08.40 **Introductory remarks on advanced interfaces for sensing and controlling paralyzed limbs**

Humberto Cerrel Bazo (Milano-Piacenza, Italy)

08.40 – 09.10 **Basic cortical mechanism subserving arm, trunk and leg movement: ontogenetic and neurophysiological basis of function-dysfunction**

Cesare Cerri (Milano, Italy)

09.10 – 09.50 **Plenary lecture: Brain-Machine interface**

G. Pfurtscheller (Graz, Austria)

09.50 – 10.25 **Decoding when and where to move from parietal reach region**

Eun Jung Hwang, Richard Anderson (Pasadena, California, USA)

10.25 – 10.55 **Robot and control of artificial afferent input in order to elicit movement in paralyzed people**

Milan Dimitrijevič, Ilse Percy (Ljubljana, Slovenia and Houston, Texas, USA, Vienna, Austria)

10.55 – 11.10 **General discussion**

11.10 – 11.30 **coffee break**

Chaired by *Prof. Marco Franceschini, Prof. Cesare Cerri and Prof. Milan Dimitrijevič*

11.30 – 12.00 **Robotic training and recovery of function: status of art**

Molteni Franco (Costamasnaga, Italy)

12.00 – 12.25 **Improving walking function following neurological injury. Efficacy of robotics locomotor devices**

George Hornby (Chicago, Illinois, USA)

12.25 – 12.50 **ReWalk: a new approach to restore gait function in SCI**

Gabi Zeilig (Tel Aviv, Israel)

12.50 – 13.05 **General discussion and closing remarks**

Milan Dimitrijevič Ilse Percy (Ljubljana, Slovenia and Houston, Texas, USA, Vienna, Austria)

13.05 – 14.00 **lunch break**

AFTERNOON SESSION

Chaired by *Prof. Alessandro Giustini, Prof. Marco Molinari and Dr Humberto Cerrel Bazo*

- 14.05 – 14.45 Cortical prosthetic control of arm and hand movement**
Andrew B. Schwartz (Pittsburgh, Pennsylvania, USA)
- 14.45 – 15.15 User interfaces for control neuroprosthesis of the upper limbs**
Ruediger Rupp (Heidelberg, Germany)
- 15.15 – 15.50 How does the spinal circuitry for locomotion reorganize after SCI?**
Reggie Edgerton (Los Angeles, California, USA)
- 15.50 – 16.25 Regaining access to the spinal circuitry for locomotion after SCI**
Gregoire Courtine (Zurich, Switzerland)
- 16.25 – 16.45 Features of neurocontrol in human recovered functional movements after spinal cord injury**
Milan Dimitrijevic (Ljubljana, Slovenia and Houston, Texas, USA)
- 16.45 – 17.00 coffee break**

Chaired by *Prof. Milan Dimitrijevic, Prof. Winfried Mayr and Prof. Ruediger Rupp*

- 17.00 – 17.30 New strategies in arm Robotics**
Giulio Rosati (Padova, Italy)
- 17.30 - 18.00 Marrow significance in neuromotor control with respect to intelligent biorobotics**
Alberto Rovetta (Milano, Italy)
- 18.00 – 18.30 Robotics vs FES: competition or synergy?**
Winfried Mayr (Vienna, Austria)
- 18.30 – 18.45 FES neuroprosthesis and FES based therapy: a review of devices and applications**
Ing. Davide Lenzi (Bologna, Italy)
- 18.45 – 19.00 General discussion and closing remarks**
Milan Dimitrijevic (Ljubljana, Slovenia and Houston, Texas, USA)