Neurobiology, neuroimaging and educational aspect in the addiction

7-8-9th June 2010
Verona, Italia
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Youth care and protection are the main priority of this Government. Nowadays we have new reasons for moving towards this direction. Neurosciences provide so many scientific evidences on growth, maturation and brain functioning, especially of young people, that it is mandatory to update the knowledge in prevention and treatment settings. We cannot ignore the dramatic drug abuse phenomenon among young people which may potentially impair their normal development, their future and the future of the whole society.

The National Department of Antidrug Policies has already activated a wide range of international collaborations with important research institutes to address the problem of drug abuse, bringing new ideas from neuroscience.

The educational approach in this field is essential in providing parents, teachers and educators with innovative instruments and evidence-based and pragmatic strategies which can help them in their crucial role of early detection of adolescents’ risky behaviours and drug abuse.
One of the objectives of the National Department for Antidrug Policies is the promotion and implementation of studies and researches based on neuroscience and neuroimaging.

Infact, neural, functional and structural correlates are detectable through new technologies like PET, fMRI, VBM-MRI providing evidence that could lead to new diagnostic, treatment and rehabilitation models within drug abuse. A new path has been opened for drug addiction departments, for parents, for teachers, for educators introducing new information, researches, visions and innovative elements in a healthcare system that has been left behind compared to the rapid evolution of drug abuse.

With the recent scientific progress and the significant change of mentality in the field, we have become more and more aware of the need to address drug abuse by means of a multidisciplinary approach and not only from a purely medical or psychological/social perspective.

The development of an evidence-based educational approach could help families and all those people involved in education who have a crucial role in the growth of our youth and who can contribute, with their daily work, to prevent young people from using drugs and to allow those affected by addiction to be better treated and understood in their disease.
When we think about future generations, we think about opportunities, development, improvement and new perspectives. Unfortunately, young people are more and more frequently threatened by drug consumption, impairing their own future, hurting their families and causing immense loss of human and productive potential for the Veneto Region and for our own country. Several important new scientific evidences are coming from neuroscience. Therefore, it is important to take them into consideration because they have brought new perspectives for interpreting and understanding the phenomenon and the mechanisms of addiction. These data confirm what comes out from the activity of our services and corroborate the need to enrich and develop the system for addiction services. Training and updating health professionals working in the addiction sector represent important aspects of the policies of this Council in order to guarantee people with alcohol and drug related problems and their families to find more and more competent professionals at the Addiction Departments. The Veneto Region has distinguished itself over the years for a strong vocation to the work with young people and for the particular concern and interest towards them. The fight against drug abuse and addiction cannot disregard the elaboration of adequate prevention policies and the implementation of diversified interventions according to socio-cultural features of the local territory. The Veneto Region has always been involved in activities consolidating the social-health integration and in promoting groundbreaking policies to contrast the spread of every kind of addiction. This Council expresses satisfaction for the collaboration with the Department for Antidrug Policies, which has developed important projects in our Region and whose results will be a benefit for the whole Italian Regions and for the Autonomous Provinces as well.
Drug addiction is certainly a serious disease with relevant health and social consequences. Using drugs, even occasionally, and especially among young people, has dramatic effects on adolescents’ psychophysical integrity and brain development. Therefore, families, schools, health structures, local, regional and central administrations need to combine their efforts to give integrated and effective answers. The Veneto Region, in collaboration with the Department for Antidrug Policies of the Presidency of the Council of Ministers, will always be in the frontline in this field. The Region has the responsibility to elaborate and implement interventions that must be adequate and innovative in both the healthcare and social sector. To this end, scientific research in neuroscience provides several cues to better understand the addiction phenomenon and to be taken into consideration by health professionals in order to update interpretative models and ways to cure this complex disease. The emphasis of studying brain functioning and structure through the lens of such an interesting approach and the implementation of specific and innovative projects carried out by the Verona Addiction Department ULSS 20 lead to broaden scientific knowledge and to bring concrete benefits not only to young people with addiction problems but to the whole community as well. Finally, it is appreciable the conjugation that this congress makes between neuroscience and science of education. That is important in order to pose sound roots for prevention programmes and to emphasize a strong educational approach based on scientific evidences about functional mechanisms of our brain.
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Understanding cerebral mechanisms at the base of drug addiction and creating of effective therapies against this disease represent one of the biggest and most difficult challenge of modern research. In my opinion, we are living an extremely exciting moment in neuroscience history. In the last 10 years the research has done giant steps and has increased the dialogue among several disciplines. Multidisciplinary collaboration is getting higher and higher among scientists involved in studying cellular biology, genetics and physiology of nervous circuits controlling the addiction. That leads to a meaningful increase of knowledge about mechanisms explaining drug addiction. Moreover, collaboration between scientists committed to basic research and researchers involved in clinical activities is increasing. Therefore, it is not by chance that a profitable collaboration among the research centre where I work, the Addiction Department, the Veneto Region and the Department for Antidrug Policies has been tightened up. Thanks to recent scientific progresses (like the discovery of optogenetic techniques) and to the drastic change of mind in the field, we are more and more aware of the need of doing research and of caring addicted patients in a multidisciplinary approach. The birth of these interdisciplinary collaborations involving clinicians, health professionals, psychologists and scientists make me extremely optimist and events like this Congress contribute to underline the importance of scientific evidences and their application. I am sure we have taken the right direction in order to try and solve the addiction problem and I am also sure that in the next future we will assist to the creation of cures that are not even thinkable right now and that will be able to defeat drug addiction in every clinical form.
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Sponsorship

United Nations Office on Drugs and Crime

Società Italiana di Neuroscienze

FNOMCeO
Federazione Nazionale Ordini Medici Chirurghi e Odontoiatri

Ordine Regionale Psicologi Regione Veneto

Associazione Nazionale Educatori Professionali

Federazione Nazionale Collegi Infermieri

Comune di Verona
CONFERENCE OPENING CEREMONY by invitation only

18.00 Welcome

18.15 Presentation
Brain’s plasticity in preventing drug use
Dr. Gilberto Gerra
Drug Prevention and Health Branch
Division for Operations
United Nations Office on Drugs and Crime

18.30 Talk show
Chatshow Host
Monica Maggioni

Participants:
Sen. Carlo Giovanardi
Under-Secretary of State to family policies, to drug addiction and to civil service within the Prime Minister Office

Dr. Giovanni Serpelloni
Chief of the Department for Antidrug Policies
Presidency of the Council of Ministers

Couns. Remo Sernagiotto
Regional Social Services Councilor
Veneto Region
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Couns. Luca Coletto  
Regional Health Policies Councilor  
Veneto Region

Dr. Perla Stancari  
Prefect of Verona

Flavio Tosi  
Mayor of Verona

Father Antonio Mazzi  
President of Exodus Foundation Onlus

Dr. Lucia Rizzi  
Psychopedagogist and teacher

From “Dream On Dance Show”  
Dance Show for a future without drugs  
“Call me” J. Jaser / “Au claire de la lune” C. Debussy  
“Assoli” AAVV  
Dancers from the Vic Ballet School - Verona

Choreographic contribution:  
Dancers from the Vic Ballet School - Verona

Direction and choreography:  
Hans Camille Vancol and Anat Weinberger

Artistic equipment by students from  
the School of Fine Arts - Verona  
Coordination by prof. G. Bagnoli - prof. C. Pinelli  

20.00  Buffet
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SESSION 1: NEUROBIOLOGY

Chairmen:
Marco Diana - Giovanni Addolorato

09.30 Synaptic plasticity in the dopamine system: therapeutic implications
Antonello Bonci

10.10 The addicted synapse: mechanisms of structural plasticity in nucleus accumbens
Scott Russo

10.50 Control of compulsive drug-seeking versus hedonic behavior motivated by natural reward: neurobehavioral mechanisms and novel pharmacological treatment targets for addiction
Friedbert Weiss
11.30 Using cognitive neuroscience methods to interprete the neurobiology of addiction
Charlotte Boettiger

12.10 Brain stimulation in the study and treatment of addiction
Abraham Zangen

12.50 Lunch

SESSION 2: NEUROIMAGING

Chairmen:
Alberto Beltramello - Franco Alessandrini

14.30 New benefits for drug abuse from high-field MR imaging
Franco Alessandrini, Giada Zoccatelli

15.10 Does the D3 dopamine receptor play a role in the addiction?
Isabelle Boileau

15.50 Functional imaging and dopamine transmission in cocaine dependence
Diana Martinez
16.30 Imaging control signals that govern choice
Ann Harvey

17.10 fMRI studies of addictions: implications for
treatment development
Marc N. Potenza

17.50 Discussion

18.30 Closening remarks
SESSION 3: NEUROPSYCHOLOGICAL FUNCTIONING

Chairmen: Antonio Fiaschi - Giovanni Serpelloni

8.30 Registration

9.00 Introduction to neuropsychology
Daniela Mapelli

9.40 Brain development and drugs
Francesco Bricolo

10.20 The neuropsychological effects of chronic marijuana use in adolescents and young adults
Krista Lisdahl Medina

11.00 Psychological and neurobiological mechanisms of relapse and vulnerability to relapse: implications for treatment
Daina Economidou

11.40 Neuropsychological test and addictions
Franca Stablum

12.20 Transcranial magnetic stimulation: new perspectives for intervention
Carlo Miniussi
SESSION 4: NEUROSCIENCE AND EDUCATION

Chairmen:
Francesco Bricolo - Maurizio Gomma

14.00   Brain plasticity and educational aspects
        Barbara Filippi

14.40   The UC Irvine Child Development Center
        Psycho-educational School Model: a model of
        school intervention for children with attention,
        learning and behavioural problems
        Sabrina Schuck

15.20   Family interventions and parent training module
        Angela Liang

16.00   Social skills intervention module
        Nicola Byford

16.40   The UC Irvine Child Development Center
        Psycho-educational School Model: organization and dissemination of
        evidence-based research in neurodevelopmental disorders
        Chiara M. Polzonetti
17.20  Practical advice for parents and teachers: a theoretical and practical approach
       Lucia Rizzi

17.40  Conclusions
       Neuroscience of Addiction: future perspectives and practical implications for the Addictions Departments
       Giovanni Serpelloni

18.00  ECM test

18.30  Closing remarks
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Giovanni Addolorato  
Internal Medicine Department  
Università Cattolica del Sacro Cuore - Roma

Franco Alessandrini  
Service of Neuroradiology  
Ospedale Civile Maggiore Borgo Trento - Verona

Alberto Beltramello  
Service of Neuroradiology  
Ospedale Civile Maggiore Borgo Trento - Verona

Charlotte Boettiger  
Department of Psychology Biomedical Research Imaging Center - University of North Carolina

Isabelle Boileau  
University of Toronto  
Clinical Research Scientist at Centre for Addiction and Mental Health

Antonello Bonci  
Ernest Gallo Clinic and Research Center  
San Francisco

Nicola Byford  
UC Irvine Child Development Center Psycho-Educational School Model

Francesco Bricolo  
Neuroscience Unit  
Department of Dependencies - ULSS 20 - Regione Veneto

Marco Diana  
Department of Science of Pharmacological drugs  
Università degli Studi di Sassari

Daina Economidou  
Department of Experimental Psychology  
University of Cambridge
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Antonio Fiaschi
Department of neurologic, neuropsychologic, morphologic and motor science - University of Verona

Barbara Filippi
Professional educator

Gilberto Gerra
Drug Prevention and Health Branch
Division for Operations
United Nations Office on Drugs and Crime

Maurizio Gomma
Addiction Department
ULSS 20 - Veneto Region

Ann Harvey
Human Neuroimaging Laboratory
Baylor College of Medicine

Angela Liang
UC Irvine Child Development Center Psycho-Educational School Model

Daniela Mapelli
Department of General Psychology - University of Padua

Diana Martinez
Columbia University
New York, NY

Krista Lisdahl Medina
University of Cincinnati

Carlo Miniussi
Department for biomedical and biotechnological science
University of Brescia
IRCCS Centre “San Giovanni di Dio Fatebenefratelli” Brescia
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Chiara M. Polzonetti
UC Irvine Child Development Center Psycho-Educational School Model

Marc N. Potenza
Psychiatry and Child Study at the Yale University School of Medicine

Lucia Rizzi
Psychopedagogist and teacher - Milan

Scott Russo
School and University Center of CUNY
Department of Neuroscience Mount Sinai
School of Medicine - New York, NY

Sabrina Schuck
UC Irvine Child Development Center Psycho-Educational School Model

Giovanni Serpelloni
Department for Antidrug Policies
Presidency of the Council of Ministers

Franca Stablum
Faculty of Psychology
University of Padua

Friedbert Weiss
Molecular and Integrative Neuroscience Department
The Scripps Research Institute (TSRI) - La Jolla, CA

Abraham Zangen
Department of Neurobiology
The Weizmann Institute of Science - Rehovot Israel

Giada Zoccatelli
Service of Neuroradiology
Ospedale Civile Maggiore Borgo Trento - Verona
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Sala Convegni - Banco Popolare
Viale delle Nazioni, 4
37121 - Verona

From the A4 Milan-Venice
Take the exit Verona Sud. Once off the motorway, take the underpass to the left towards Viale delle Nazioni. On leaving the underpass, the destination is 50 yards on the left.

From Valerio Catullo Airport
By bus - On leaving the airport, shuttle service is available ATV “Verona Porta Nuova Railway Station - Airport Catullo”, operating every day with a race every 20 minutes from 5.40 at 23.10, at a cost of € 4.50. In 15 minute, the shuttle service connects the airport Catullo with the main train station in Verona. You can buy the ticket at the airport or directly on the bus (no charge).

From Railway Station
> By bus - You can reach the Congress taking the urban bus 83, from the sidewalk F in front of the station (journey time 10 minutes).
> By car - Leaving the airport follow the signs for the Verona Center - Fair - South Freeway. Follow signs for “South Bypass - ZAI-Fair.” Once on the South Freeway, keep the direction towards Verona Centre - ZAI - Vicenza, take exit 6 “Strada dell’Alpo”. Turn left onto Strada dell’Alpo. Go straight on Via Rovegga. Take Pacinotti (second right) and go straight up to the crossroads with Viale delle Nazioni. The destination is 10 meters far, on the right (travel time 15 minutes).

From the railway station
By bus - Take the urban bus 83, from the sidewalk F in front of the station (journey time 10 minutes).
Here is our new Neuroscience website where are reported results and developments of new scientific studies on brain areas involved in the addiction mechanisms. Topics on new technologies, such as neuroimaging, and contributions from the scientific community in the addiction field are also reported.
Here below are our information websites, promoted by the Italian Department for Antidrug Policies - Presidency of the Council of Ministers. They are addressed to schools and health professionals and are aimed at supporting students, teachers, parents and health providers in the prevention of drug abuse amongst young people.

www.politicheantidroga.it  www.droganews.it
www.dronet.org  www.drugfreedu.org
www.droganograzie.it  www.allertadroga.it
www.dreamonshow.it  www.drugsonstreet.it
Neurobiology, neuroimaging and educational aspects in the addiction

Addiction Department
Secretary
Via Germania, 20 37136 - Verona
Tel. 045 8076206 - 56
E-mail: pft@dronet.org

In collaboration with

Scientific coordination
Dr. Giovanni Serpelloni

Certificate
At the end of the workshop, a participation certificate will be granted.
Enrollment

In order to take part to the congress, it is necessary to fill in a registration form you can download from the website www.dronet.org/iscrivi.

Please, send the filled form not later than 3rd June 2010.

Enrollment is free, but mandatory.

You are kindly requested to confirm your attendance by telephone or by e-mail.

ECM credits

For the participation to the present congress, you will receive 9 ECM credits.

Credits will be granted only if the participant attends at the 90% of the whole congress time and passes the evaluation test (at least 80% of right answers).