

Tuesday, April 5, 2005

## SS-14. Section symposium: Emotional neuroscience in psychiatry (under aegis of AEP neuroimaging section)

*Chairperson(s):* Andreas Heinz (Berlin, Germany),  
Sophia Frangou (London, United Kingdom)  
14.15 - 15.45, Holiday Inn - Room 3

### SS-14-01

J. O'Doherty. *Wellcome Department of Imaging, London, United Kingdom*

### SS-14-02

Reduced ventral striatal activation during expectancy of reward but not loss in untreated schizophrenics - association with negative symptoms

G. Juckel, J. Wrase, A. Heinz, F. Schlagenhauf, B. Knutson.  
*Campus Charite Mitte, Berlin, Germany*

Affective negative symptoms may be associated with dysfunction of the brain reward system in schizophrenia. We used functional magnetic resonance imaging (fMRI) to assess the BOLD response in the ventral striatum of unmedicated schizophrenics during presentation of reward-indicating and loss-indicating stimuli. Ten schizophrenic men (seven never-medicated, three unmedicated for at least two years) and ten age-matched male healthy volunteers participated in an incentive monetary delay task, in which visual cues predicted that a rapid response to a subsequent target stimulus will gain money, avoid losing money or have no consequence. Compared with the neutral condition, presentation of reward-indicating cues elicited reduced activation of the left ventral striatum in schizophrenics. Decreased activation of the left ventral striatum was inversely correlated with the negative symptom of low rapport. Stimuli indicating potential loss elicited increased activation of the left caudate in schizophrenics, which was negatively correlated with difficulty in abstract thinking. Reduced activation of a central area of the brain reward system, the ventral striatum, was correlated with low rapport in social interactions in schizophrenics. On the other hand, schizophrenics displayed an increased response to stimuli predicting potential loss and may thus avoid aversive outcomes and increased severity of psychotic symptoms. Striatal response in schizophrenia seems to be biased towards increased processing of cues that indicate negative rather than positive behavioral consequences.

### SS-14-03

Brain imaging in bipolar disorder

S. Frangou. *Institute of Psychiatry, London, United Kingdom*

**Objective:** The Maudsley Bipolar Disorder Project set-out to investigate the cognitive, brain structural and functional characteristics of Bipolar Disorder I (BDI).

**Methods:** Participating patients were recruited while in remission from a secondary care setting and were matched to healthy volunteers in terms of age, gender, race and years of education. All participants underwent extensive clinical and

cognitive assessment. Brain structural and functional data were also obtained using Magnetic Resonance Imaging.

**Results:** Compared to controls, patients showed subtle widespread decrements with executive function being more markedly impaired. Also, patients showed volume decrements in the ventral prefrontal cortex (VPFC) bilaterally and the dorsal PFC (DPFC) on the left while the volume of the amygdala was bilaterally enlarged. Patients showed subtle abnormalities in functional MRI in their DPFC with marked decrements in activity in the both DPFC and VPFC in tasks that rely on the functional interaction of these brain regions.

**Conclusion:** Our results suggest that BDI is associated with trait deficits in executive function and in the structure and function of the PFC.

### SS-14-04

Neuroimaging of Aggression and Impulsivity

S. C. Herpertz, T. Vloet, B. Herpertz-Dahlmann, I. Marx, G. Fink.  
*Rostock Universität Psychiatrie & Psychotherapie, Rostock, Germany*

Studies of biological underpinnings of aggressive and impulsive behavior started with lesion studies mostly in patients with acquired sociopathy who typically showed circumscribed injuries of prefrontal or temporal cortical areas. Neuroimaging studies of subjects with developmental psychopathy indicate similar structural and functional anomalies in the frontal and temporal lobes. When using emotional paradigms, the hypoactivity of the anterior cingulum and of the orbitofrontal cortex is the most consistent finding, which may reflect the emotionally undifferentiated approach to other people and the indifference towards social appraisal. Interestingly, autonomic hypo-responsiveness, a significant risk factor for developing antisocial, violent behavior, is thought to be associated with orbitofrontal dysfunction, while impulsiveness is correlated with activity in ventrolateral prefrontal areas, which are highly involved in behavioral inhibition. Concerning the amygdala, neuroimaging data are quite contradictory ranging from decreased to increased activity; this inconsistency in findings may have to do with the lack of differentiation between aggression that results from emotional hyperreactivity and that which occurs in the context of emotional hyporeactivity. In the first case, aggression is due to strong emotions of anger or fear, whereas in the latter aggression results from the lack of fear of punishment and/or a lack of empathy with the victim. Consequently, future neuroimaging work has to consider different pathways in the genesis of pathological aggression to better understand its psychobiological underpinnings.

### SS-14-05

Impaired function of dorsolateral prefrontal cortex and nucleus accumbens may contribute to reduced processing of positive emotional stimuli in detoxified alcoholics

A. Heinz, T. Kienast, T. Siessmeier, J. Wrase, P. Bartenstein, S. M. Grüsser-Sinopoli, D. Braus, G. Gründer, M. Schreckenberger, V. Florio, K. Mann, M. Smolka. *Campus Charite Mitte Universitätsklinikum, Berlin, Germany*

**Objective:** Alcohol stimulates dopamine release in ventral striatum. Chronic alcohol consumption leads to long lasting changes in dopaminergic neurotransmission. Previous studies showed increased

alcohol craving in patients with low [(18)F]DOPA uptake and with low D2 receptor availability in the ventral striatum, which in turn was correlated with increased activity of the medial prefrontal cortex during presentation of alcohol cues versus neutral slides. Another characteristic of patients with chronic alcoholism may be a decrease in emotional involvement and incentive value attribution to ordinarily rewarding stimuli, compared to an increased reactivity to alcohol specific cues. This effect has been suggested to follow a failure of interaction between the dopaminergic reward system and functions of the prefrontal cortex. This study was performed to investigate the effects of dopaminergic activity in the brain reward system on incentive salience attribution of positive, stimuli.

**Methods:** Positron emission tomography imaging with the radioligand [(18)F]DOPA as well as functional magnetic resonance imaging (fMRI), was used to compare 12 detoxified male alcoholics with 13 healthy men. We measured the association between the DOPA decarboxylase activity in the nucleus accumbens/ventral striatum and functional brain activation during presentation of positive and neutral affective pictures.

**Results:** Healthy patients showed a positive correlation between activation of the dorsolateral prefrontal cortex during presentation of positive versus neutral stimuli and [(18)F]DOPA uptake in nucleus accumbens in both hemispheres ( $p < 0.05$  corrected for small volumes). However, there was no significant correlation in the alcohol dependent group.

**Conclusion:** This finding may offer a neurobiological correlate of reduced processing of positive emotional stimuli among detoxified alcoholics.

### SS-14-06

F. Schneider. *Universitätsklinik Psychiatrie und Psychotherapie, Aachen, Germany*

Sunday, April 3, 2005

### W-01. Workshop: Driving ability and psychiatric illness

*Chairperson(s):* Gerd Laux (Wasserburg am Inn, Germany), Michael Soyka (Munich, Germany)  
08.30 - 10.00, Holiday Inn - Room 4

A. Brunbauer. *District Hospital Gabersee, De, Wasserburg am Inn, Germany*

G. Laux. *District Hospital Gabersee Department of Psychiatry, Wasserburg am Inn, Germany*

M. Soyka. *University of Munich, Departme, Munich, Germany*

R. Mager. *Center of Applied Technologies, Basel, Switzerland*

A. Schale. *Hospital Bethel Welzheim, Welzheim, Germany*

Driving is a daily activity for most people in developed countries and is important for many patients in maintaining independence. In this context psychotropic medication and traffic safety is of great relevance. At present there are only few reliable data about psychomotor ability and driving performance of patients under pharmacological treatment. The symposia we will focus on various aspects of driving ability and psychiatric illness and will present new research data to the following topics: 1. Schizophrenia, anti-psychotics and driving ability 2. Depression, antidepressants and driving ability 3. Drug dependence, substitution therapy and driving

ability 4. Course and stability of psychomotor functions related to car driving skills in psychiatric patients 5. Therapy of driving ability

Sunday, April 3, 2005

### W-02. Workshop: Outpatient commitment - Will it change (forensic) psychiatric treatment?

*Chairperson(s):* Norbert Nedopil (München, Germany), Joris Casselman (Bierbeek, Belgium)  
08.30 - 10.00, Holiday Inn - Room 5

D. Sestoft. *Frederiksberg Hospital Dept. of Psychiatry, Frederiksberg, Denmark*

Outpatient commitment for psychiatric patients under custody has become a topic in several European countries and is advocated by some legislative proposals as a less costly and less coercive measure compared to involuntary or coercive hospitalisation. It has been practiced and evaluated in several States of the US with ambivalent results. Commitment to outpatient treatment is quite effective for forensic patients, but it is questionable whether these results can be expected with patients under civil custody, since they come from a different diagnostic spectrum and are under a different legal status. The necessary safeguards to protect their rights and the practical problems with coercion in clinical outpatients appear much more complex as to find a simple solution. Regarding the legislative proposals and the practical experiences the symposium will try to reflect the current status and the possible consequences of coercive legal measures for outpatient treatment.

Sunday, April 3, 2005

### W-05. Workshop: Prediction of treatment response in psychiatry: Integration of concepts and methods

*Chairperson(s):* Oliver Pogarell (Munich, Germany), Silvana Galderisi (Napoli, Italy)  
14.15 - 15.45, Holiday Inn - Room 5

T. Dierks. *Bern, Switzerland*

O. Pogarell. *University of Munich Psychiatry, Munich, Germany*

C. Mulert. *Dept. of Psychiatry, Universit, Munich, Germany*

S. Galderisi. *Department of Psychiatry, Univ, Napoli, Italy*

A. Mucci, U. Volpe, E. Merlotti, M. Maj.

U. Hegerl. *Psychiatrische Klinik der Ludw, München, Germany*

Suicide prevention has become increasingly important in the area of public health. Programs in many European countries have been started in order to reduce suicide rates. There is, however, only few evidence for the efficacy of prevention activities. Psychological autopsy studies showed that depression is one of the main causes of suicidality. However, only a minority of the people suffering from depression receive antidepressive treatment that corresponds to the criteria of an evidence based medicine. Better screening for depression in primary care and increased awareness towards suicidality are necessary steps for successful prevention. The goal of