

<sup>3</sup> *Unidad de Rehabilitación Psiquiátrica, Secretaría de Salud de Nuevo León, Monterrey, Mexico*

<sup>4</sup> *Unidad de Rehabilitación Psiquiátrica, Secretaría de Salud de Nuevo León, Universidad de Monterrey, Monterrey, Mexico*

\* *Corresponding author.*

**Introduction** Spectroscopy is a diagnostic method using MRI, to analysis tissue in vivo noninvasively. There are several studies with magnetic resonance spectroscopy (MRS) in patients with psychiatric disorders, especially schizophrenia and Alzheimer's type dementia, in their different developmental stage. Sometimes spectroscopy may allow brain metabolic changes to be observed before the onset of alterations in brain parenchyma. We do not know any documented case of spectroscopy performed on a psychiatry-targeted manner on our hospital. It is a noninvasive technique without added cost to the MRI and is available in our hospital. It seems interesting for us to combine two specialties like radiology and psychiatry in the field of a neuroimaging Project.

**Objectives and aims** Our goal is try to establish a radiological anatomical correlate to brain molecular levels. It's a transverse and longitudinal prospective observational study in which subjects will be submitted to various psychiatric assessments by conducting a radiological examination that is the MRI and MRS to determine the regional metabolic pattern in the subjects explored.

**Methods** Informed consent to all patients, aged more than 18 years, selected according inclusion/exclusion criteria that meet ethical principles. Patients are selected within the public health network of Sacyl Health Care System, Zamora Hospital, Spain.

**Expected results and conclusions** Schizophrenia increased creatinine, choline and glutamate. NAA decrease in untreated patients and increased the same in patients with treatment Alzheimer: < increased NAA (N-acetyl aspartate) and increased MI (myo-inositol), their relationship has a high negative predictive value, ie if it is negative (the peaks are not increased) is discarded Alzheimer's disease. Early Dx/screening? Treatment?

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### EW354

#### **Gender differences in neural activation during perceptual uncertainty in patients with major depression**

T. Sobanski<sup>1,\*</sup>, H. Sauer<sup>2</sup>, K.J. Bär<sup>2</sup>, G. Wagner<sup>2</sup>

<sup>1</sup> *Thuringen-Kliniken GmbH, Psychiatry, Psychotherapy and Psychosomatic Medicine, Saalfeld, Germany*

<sup>2</sup> *Friedrich Schiller University, Psychiatry and Psychotherapy, Jena, Germany*

\* *Corresponding author.*

**Introduction** Although male and female patients with major depression (MDD) differ in psychopathology and other illness characteristics, a potentially confounding effect of gender has not been systematically controlled or investigated in most of the previous neuroimaging studies.

**Objectives** We investigated activation patterns during processing of ambiguous stimuli in MDD by functional MRI.

**Aims** We aimed at examining potential activation differences between male and female patients.

**Methods** A matching task was employed in which two stimuli with varying degrees of perceptual uncertainty had to be compared with respect to their sameness. Eighteen patients meeting DSM-IV criteria of MDD and eighteen healthy control subjects participated in this study.

**Results** Whereas on the level of behavioral performance no significant group differences could be detected we found distinct disorder- and gender-related differences in the brain activation.

Patients activated significantly stronger in superior parietal, prefrontal and cingulate regions. Gender specific analyses revealed that the hyperactivity in the patient group was mainly attributable to hyperactivity in the male patients who activated significantly stronger than the female patients in an extensive fronto-temporo- limbic network, which partly overlapped with the network we found when comparing patients and healthy controls.

**Discussion** Our results indicate that male patients seem to be reliant on a significantly stronger metabolism in task-relevant regions to maintain an equal level of performance.

**Conclusion** The present results provide evidence for gender-related differences in the functional organization of the brain in patients with MDD. Gender differences should be taken into consideration when investigating the neural correlates of MDD.

**Disclosure of interest** The authors have not supplied their declaration of competing interest.

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### EW355

#### **Searching for meaning in meaningless gestures, pathologic activity in amygdala, hippocampus and temporal pole during planning of gestures in schizophrenia**

K. Stegmayer<sup>1,\*</sup>, B. Stephan<sup>2,3</sup>, V. Tim<sup>2,3</sup>, F. Andrea<sup>1</sup>, W. Roland<sup>4</sup>, M. Rene<sup>5</sup>, S. Werner<sup>1</sup>, W. Sebastian<sup>1</sup>

<sup>1</sup> *Psychiatric University Hospital Bern, Department of Psychiatry, Bern, Switzerland*

<sup>2</sup> *Neurology and Neurorehabilitation Center, Kantonsspital Luzern, Luzern, Switzerland*

<sup>3</sup> *Department of Clinical Research, University Hospital, Inselspital, Bern, Switzerland*

<sup>4</sup> *Institute of Neuroradiology, Inselspital, Bern, Switzerland*

<sup>5</sup> *Department of Neurology, University Hospital, Inselspital, Bern, Switzerland*

\* *Corresponding author.*

**Introduction** Schizophrenia is characterized by poor social interaction contributing to poor functional outcome. Particularly nonverbal communication is disturbed. Neural correlates of impaired gesturing are currently unclear. We thus tested functional correlates of gesturing in schizophrenia patients and healthy controls.

**Methods** We tested 22 patients and 25 controls with an event-related fMRI (instructed delay) paradigm to dissociate brain activation during planning and execution of meaningful (e.g. use scissors) and meaningless novel gestures. Preprocessing included realignment, coregistration, normalization and spatial smoothing. We used a two stage mixed effects model for statistical analysis. Conditions were contrasted against a linguistic control within and between groups. We correlated psychopathological characteristics with beta estimates of brain areas with between group effects.

**Results** During planning and execution of both gesture subtypes both groups activated brain areas of the ventral and dorsal stream. However patients' activity was less prominent and more left lateralized. During planning patients showed additional activity in bilateral temporal poles, amygdala and hippocampus associated with the level of delusions. Furthermore patients had increased dorsomedial prefrontal cortex and precuneus activity when planning meaningless gestures.

**Conclusion** During the planning of meaningless gestures we detected aberrant activation of limbic structures in patients typically implicated in delusion formation, which also correlated with current severity of delusions. Moreover, planning of meaningless gestures relied on areas relevant for strategic control and attention. These results argue for a pathologic search for meaning in

neutral gestures and increased control effort during planning of meaningless gestures in schizophrenia.

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## Obsessive-compulsive disorder

EW357

### Neuroimaging correlates of insight in obsessive compulsive disorder: A fMRI study

A. Gadad\*, D.Y.C.J. Reddy, D.G. Venkatasubramanian, D.J. C.N. National Institute of Mental Health & Neurosciences, Psychiatry, Bangalore, India

\* Corresponding author.

**Aim of the study** To study the neural substrates of insight in OCD by comparing patients with good insight, patients with poor insight and matched healthy controls using functional MRI.

**Methodology** Subjects were recruited from among patients attending OCD clinic, adult psychiatry services and psychiatry ward inpatients of National Institute of Mental Health And Neurosciences (NIMHANS), Bangalore. They were further divided into 'good insight' ( $n=30$ ) and 'poor insight' ( $n=14$ ) using Brown's assessment of belief's scale. Control subjects ( $n=30$ ) were recruited from consenting volunteers. 3 T MRI was used, mental rotation task was paradigm used for fMRI and analysis was done by SPM 8.

**Results** Poor insight patients and Good insight patients comparison revealed differential activation in Left superior/Medial frontal gyrus (corresponding to the DLPFC). A negative correlation between BABS score and activation of right inferior parietal lobule. Mental Rotation task behavioural data results: OCD patients as a group had significantly lower accuracy compared to healthy controls. Poor insight group had significantly decreased accuracy ratio compared to Good insight group and healthy controls. A negative correlation was noted between BABS score and accuracy ratio, indicating that poorer the insight, greater the errors during the active task.

**Conclusion** Insight has been important prognostic factor in OCD. Poor insight patients had specific deficits in left medial frontal gyrus and right inferior parietal lobule as compared to good insight patients and healthy controls. Together, these indicate that insight has a strong neurobiological underpinning in OCD.

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EW359

### Differential effects of coping strategies on autogenous and reactive obsessions

M.S. Lee<sup>1,\*</sup>, S.M. Kwon<sup>2</sup>

<sup>1</sup> Seoul National University Hospital, Department of Psychiatry, Seoul, Korea

<sup>2</sup> Seoul National University, Department of Psychology, Seoul, Korea

\* Corresponding author.

**Introduction** Obsessive thoughts can be categorized into two subtypes, autogenous obsessions and reactive obsessions. Although it has been investigated that each subtype associates with different maladaptive coping strategies, no studies have yet empirically compared the effectiveness of adaptive coping strategies on autogenous and reactive obsessions.

**Objectives** It is hypothesized that acceptance, which is a core therapeutic principle of acceptance-based cognitive therapy (ACT), is more effective on autogenous obsessions, whereas response suppression as a principle of exposure and response prevention (ERP) has a stronger effect on reactive obsessions.

**Aims** To compare the effectiveness of two coping strategies (acceptance and response suppression) on autogenous and reactive obsessions.

**Methods** A total of 164 undergraduate students completed questionnaires for obsessional thoughts and coping strategies. According to the most distressing thought, sixty subjects ( $n=30$  with autogenous obsession,  $n=30$  with reactive obsession) were randomly assigned to two groups differing in treatment conditions. Individual psychoeducation and practice were performed for four different groups (2 obsessional subtypes  $\times$  2 coping strategies).

**Results** Repeated measure ANOVA demonstrated that the autogenous obsessional group showed greater distress reduction after acceptance treatment than response suppression treatment, although its effect was not statistically significant. However, the reactive obsessional group did not show the interaction effect between distress reduction and the two coping strategies.

**Conclusions** The results suggest that coping strategies have differential effects on distress reduction of obsessional subtypes. Different therapeutic approaches may need to be offered to individuals with autogenous and reactive obsessions.

**Disclosure of interest** The authors have not supplied their declaration of competing interest.

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EW360

### Adjuvant treatment of resistant obsessive-compulsive disorder with memantine: A case report

D. Mota<sup>1,2,\*</sup>, A. Oliveira<sup>1,2</sup>, J. Silva<sup>1</sup>, M. Fernandes<sup>1</sup>, J. Ribeiro<sup>1</sup>, V. Martins<sup>1</sup>, F. Duarte<sup>1</sup>, M. Marques<sup>1,2</sup>, A.T. Pereira<sup>1,2</sup>, J. Andrade<sup>1,2</sup>, A.F. Macedo<sup>1,2</sup>

<sup>1</sup> Centro Hospitalar e Universitario de Coimbra, CRI de Psiquiatria e Saúde Mental, Coimbra, Portugal

<sup>2</sup> Faculty of Medicine, University of Coimbra, Department of Medical Psychology, Coimbra, Portugal

\* Corresponding author.

**Introduction** OCD could be a very disabling condition, implying severe impairment of social and occupational functioning and decreased quality of life. OCD is treated with a combination of psychopharmacological treatments and cognitive-behavioural therapy. Clomipramine was the first anti-obsessive drug, and was followed by selective serotonin re-uptake inhibitors (SSRIs), both modulating serotonergic transmission. Low dose atypical anti-psychotic are sometimes used to potentiate serotonergic agents. Growing evidence based on animal models and on neuroimaging shows that glutamatergic transmission could play an important role in the aetiology of OCD. Therefore, glutamate modulators such as N-methyl-D-aspartate (NMDA) receptor antagonists became the focus of the search of novel treatments for OCD. One of this drugs, memantine, already approved for Alzheimer disease treatment, was used off-label the first time ten years ago in resistant case of OCD with positive results. Besides some further successful case reports, there are a single-blind case control study and a couple of randomized, double-blind, placebo-controlled trials showing improvement of OCD symptoms with memantine adjuvant pharmacotherapy.

**Objectives and aims** To describe a case report of off-label treatment of a severe resistant case of OCD with memantine, after 15 weeks of treatment.

**Methods** Literature review and case description. Before beginning treatment with memantine, the patient made a psychological assessment (baseline) with a battery of tests (MINI Plus, Y-BOCS,