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**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**

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**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**

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**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