

## P01-15 - NEURAL CORRELATES OF COGNITIVE CONTROL IN MAJOR DEPRESSIVE DISORDER

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**Objectives:** Cognitive control of emotions by reappraisal strategies is a psychotherapeutic technique reducing emotional load and anxiety in stressful situations. A previous study in healthy subjects resulted in a top-down regulatory effect by reappraisal during the anticipation of negative and unknown cued emotional stimuli as expressed by increased medial prefrontal cortical activation and accordingly reduced amygdalar activity. We were now interested in neurobiological changes in patients with major depressive disorder (MDD) compared to healthy controls during the application of cognitive control.

**Methods:** 20 patients suffering from a depressive episode in the course of MDD and 20 healthy subjects underwent functional magnetic resonance imaging. All subjects were instructed and trained to apply a 'reality check' as cognitive control strategy during the cued anticipation of known negative and possibly negative, thus unknown (50% positive/negative) emotional stimuli.

**Results:** Applying cognitive control during the anticipation of negative and unknown cued stimuli, depressed patients had lower brain activity compared to healthy controls in thalamic and occipital regions as well as in the right extended amygdala, in the anterior cingulate cortex and the right anterior insula. Brain activity was increased in depressed patients in the right precentral gyrus and the left superior temporal gyrus/posterior insular region (close to Wernicke region).

**Conclusion:** We found several areas with reduced and also increased activations in MDD compared to healthy controls. We found no obvious deficits in this preliminary analysis in regions as the amygdala and the MPFC, corresponding to the hypothesized deficits in cognitive control mechanisms in MDD.