

## PW01-02 - REDUCED LEFT SUBGENUAL ANTERIOR CINGULATE CORTICAL ACTIVITY DURING WITHDRAWAL-RELATED EMOTIONS IN UNIPOLAR DEPRESSED FEMALE PATIENTS

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**Background:** Although the subgenual anterior cingulate cortex (Cg25: Brodmann area 25) is an important target area in the treatment of affective disorders, its involvement in the evaluation of emotional salience of visual stimuli during depressed episodes is not quite understood. Research regarding the neurocircuitry in mood disorders suggests an important role of this anatomical region for affective information processing.

**Objective:** In this study, we focused on Cg25 neuronal responses in depressed females using a paradigm in which emotions are elicited without explicit cognitive control, relying on the salient nature of the mood inducing stimuli eliciting approach-related emotions (like happiness) or withdrawal-related emotions (like disgust).

**Methods:** Twelve treatment-resistant melancholic depressed women and 12 age-matched healthy female control subjects were asked to passively view blocks of baby faces when undergoing functional magnetic resonance imaging (fMRI).

**Results:** Compared to the healthy females, the depressed patients displayed significantly higher bilateral Cg25 neuronal activities in both emotional experiences. Whereas in melancholically depressed women, right-sided Cg25 activity was comparable for both emotional experiences, we found significantly less left-sided Cg25 neuronal activity during the withdrawal-related emotional experience.

**Conclusions:** Our results could indicate that in depressed women the left Cg25 modulates intense visceral emotional responses to aversive visual stimuli. Our observations could help to explain why in unipolar melancholic depression the left Cg25 provides a valid target region for antidepressant treatment strategies, such as deep brain stimulation and anterior cingulotomy and nervus vagus stimulation therapy, which all seem to correlate with decreases in left Cg25 activity.