EEG ACTIVITY IN THE GAMMA BAND AND LATE POSITIVE POTENTIAL (LPP) DURING PROCESSING ATTACHMENT-RELATED STIMUL

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Introduction

Patients with Major Depression (MD) experience increased negative affect, associated with dysfunction in the regulation of emotions, cognitive control and processing of self-referential information, suggesting prefrontal involvement. Gamma band activity is known to play a role in integrating cognitive processes whereas late positive potentials (LPP) are crucial for emotion regulation. Here, we investigate neural correlates during elaboration of attachment-relevant personalized stimuli in MD.

Objectives

Identifying neural correlates of MD during exposure to attachment-relevant stimuli with EEG.

Aims

To find out whether an increase in the gamma band and LPP may be related to the elaboration of attachment-relevant personalized stimuli in MD

Methods

20 depressed (DSM-IV) unmedicated outpatients and healthy controls (N = 20) were presented with a validated set of seven standardised attachment-related scenes. Each picture stimulus was accompanied by three neutral sentences and three personal attachment relevant key-sentences derived form a previously conducted attachment interview.

EEG recording was performed with 32 electrodes. Evoked gamma activity was characterized by a Morlet wavelet transformation using the software Brain Vision Analyzer 2.0. We computed LPP for the time slot 500–1000ms.

Results

Patients showed higher levels of gamma activity and late positive potentials than control participants in fronto-central electrode sites that have been previously associated with emotion regulation and cognitive functions.

Conclusions

The present study offers evidence that EEG gamma activity reflects important indicators of processing personal affective stimuli in MD compare to healthy individuals. The involvement of the medial prefrontal cortex may also relate to the self-focused functioning that characterizes depressed individuals.