

P-159 - REPETITIVE TRANSCRANIAL MAGNETIC STIMULATION (RTMS) OF THE PREFRONTAL CORTEX MODULATES EARLY AFFECTIVE PROCESSING

P.Zwanzger, C.Steinberg, A.-K.Bröckelmann, M.Zavorotnyy, K.Domschke, M.Junghoefer

University of Muenster, Muenster, Germany

Background: Disturbed prefrontal cortex (PFC) functions as consequent upon a hyperresponsive amygdala (bottom-up) or/and a lack of PFC-amygdala top-down control are discussed as main reasons for affective disorders. Here we aimed to investigate the specific function of the dorsolateral-PFC (DLPFC) on emotional processing by a temporary deactivation of this region by means of 1-Hz rTMS.

Methods: Before and after rTMS (1 Hz, 1800 stimuli, N=15) or sham (N=15) treatment of the right DLPFC, subjects viewed pictures of fearful (40) or neutral (40) emotional faces, while visual evoked magnetic fields were acquired with a 275 sensor whole head MEG system.

Results: There was a clear increase of neural processing within bilateral parietal areas as consequence of rTMS but not sham treatment starting around 90ms after stimulus onset. While this parietal treatment effect occurred for both affective conditions, an area at the right temporo-parietal junction (TPJ) showed an increases sensory processing specifically for fearful faces.

Conclusions: rTMS associated decrease of DLPFC function diminished the known inhibitory impact of this region on limbic and paralimbic structures such as the orbitofrontal cortex, leading to a valence independent modulation of parietal top-down attention areas and an eventually amplified sensory processing of emotional material at right TPJ.

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