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OVERACTIVATION OF THE MIDDLE CINGULATE CORTEX AND THE CAUDATE NUCLEUS AS NEURAL CORRELATES OF THE FAMILIAL LIABILITY TO MAJOR DEPRESSIIVE DISORDER

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Introduction: Unaffected healthy 1st degree relatives of patients with major depressive disorder (MDD) are 3.6 times more liable to develop the disease themselves than the standard population without the history of the disorder. Neural correlates of this liability are of particular interest since the phenomenon does not always have behavioral manifestations and early detected can enhance quicker and better MDD prevention.
Objective: The objective of our study was to establish neuronal correlates of susceptibility MDD in unaffected healthy 1st degree relatives of patients with MDD. Inhibition of emotional information was examined in the present study.
Aims: The aim of the study was to better understand the development of MDD and the role of altered inhibition of emotional processing in it. That, in consequence, may contribute to establishing new methods of prevention and quicker detection of MDD liability.
Methods: Twenty-one unaffected healthy 1st degree relatives of patients with MDD and twenty-five matched healthy controls underwent a functional magnetic resonance imaging procedure with a task involving inhibition of emotional processing of positive, negative and neutral emotional information. 2x3 ANOVA was performed to establish if the two groups differed significantly in the inhibition of one of the three types of emotions.
Results: The unaffected healthy 1st degree relatives displayed an increased neural activation during the inhibition of negative emotional information in the bilateral middle cingulate cortex (MCC) and the left caudate nucleus ($p < 0.05$, family wise error).
Conclusions: The overactivation of the MCC and caudate nucleus can be a marker of MDD liability

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