

Neural Correlates of Cognitive Dysfunction in Mood Disorders

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Objectives : To define neural correlates of cognitive dysfunction in major depression and to disentangle the role of cognitive, default mode and limbic networks in emotional and cognitive problems of depressed patients

Material and Methods. We will review brain imaging studies of executive function and rumination in depression. We will also describe results of a recent study conducted in healthy volunteers (n=41) using cognitive tasks related to ruminative processes. During fMRI acquisition subjects were asked to read sentences and to engage in an analytical or an experiential self-referential task.

Results. Several studies using executive tasks related cognitive effort in depressed patients with increased activation of the dorsolateral prefrontal cortex. This hyperactivity of lateral prefrontal cortex is associated with abnormal deactivation of medial brain structures such as the medial prefrontal cortex. Consistent with this review, our study in healthy volunteers showed that subjects with High score in rumination showed lower activity in medial brain structures in relation with difficulties to differentiate analytical and experiential self-focus.

Conclusion : Overall these findings support the hypothesis of abnormal interaction in cognitive and default mode network in depression and may help to refine our understanding of how rumination promotes depression through maladaptive self-focus.