Article: EPA-0142
Topic: S500 - Symposium: Neurobiological underpinnings of cognitive and emotional aspects in psychiatric disorders and psychotherapy

Neural changes in depressed patients during psychodynamic psychotherapy: An fMRI Study

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Neuroimaging studies of depression have demonstrated treatment-specific changes involving the limbic system and regulatory regions in the prefrontal cortex. While these studies have examined the effect of short-term, interpersonal or cognitive-behavioural psychotherapy, the effect of long-term, psychodynamic intervention has never been assessed. Here, we investigated recurrently depressed (*DSM-IV*) unmedicated outpatients (*N*=16) and control participants matched for sex, age, and education (*N*=17) before and after 15 months of psychodynamic psychotherapy. Participants were scanned at two time points, during which presentations of attachment-related scenes with neutral descriptions alternated with descriptions containing personal core sentences previously extracted from an attachment interview. Outcome measure was the interaction of the signal difference between personal and neutral presentations with group and time, and its association with symptom improvement during therapy. Signal associated with processing personalized attachment material varied in patients from baseline to endpoint, but not in healthy controls. Patients showed a higher activation in the left anterior hippocampus/amygdala, subgenual cingulate, and medial prefrontal cortex before treatment and a reduction in these areas after 15 months. This reduction was associated with improvement in depressiveness specifically, and in the medial prefrontal cortex with symptom improvement more generally. This is the first study documenting neurobiological changes in circuits implicated in emotional reactivity and control after long-term psychodynamic psychotherapy.

https://doi.org/10.1016/S0924-9338(14)77614-X Published online by Cambridge University Press