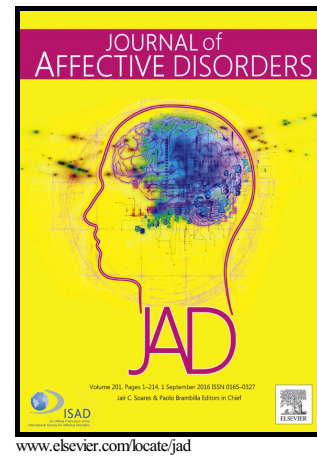


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Abnormal emotional and neural responses to romantic rejection and acceptance in depressed women

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Abstract

Introduction

Responding adaptively to one's social environment is a key factor predicting the course of major depressive disorder (MDD). Socially rejecting events can exacerbate, whereas socially accepting events can ameliorate depressive symptoms. The neural responses to rejection and acceptance in MDD are relatively unexplored.

Methods

We used functional magnetic resonance imaging (fMRI) to measure neural responses to romantic rejection and acceptance in women diagnosed with current MDD (n=19) and a matched group of healthy controls (HCs) (n=19). During fMRI, participants received rejecting, accepting, and neutral feedback from self-selected potential romantic partners.

Results

In women with MDD but not HCs, rejection significantly increased activity in the right anterior insula relative to neutral feedback. Greater activation during rejection was found in the dorsal anterior cingulate cortex in MDD compared to HCs. Women with MDD reported stronger emotional responses than HCs to both rejection and acceptance. In addition, left and right nucleus accumbens (NAcc) activity mediated the relationship between trait reward responsiveness and increased ratings of feeling "happy and accepted" following acceptance in HCs, but not the MDD group.

Discussion

Women with MDD were behaviorally and neurally hyperresponsive to rejection. Although both groups were behaviorally responsive to acceptance, in MDD this was dissociated from NAcc activity. These findings highlight abnormal behavioral and neural responses to social cues in MDD, with implications for disease prognosis and the development of novel and sensitive biomarkers for MDD focused on neural pathways for social-affective processing.

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