

Author's Accepted Manuscript

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PII: S0165-0327(17)30616-X
DOI: <http://dx.doi.org/10.1016/j.jad.2017.09.028>
Reference: JAD9236

To appear in: *Journal of Affective Disorders*

Received date: 27 March 2017
Revised date: 9 July 2017
Accepted date: 21 September 2017

Cite this article as: Malte S. Depping, Nadine D. Wolf, Nenad Vasic, Zrinka Sosic-Vasic, Mike Schmitgen, Fabio Sambataro and Robert C. Wolf, Aberrant resting-state cerebellar blood flow in major depression, *Journal of Affective Disorders*, <http://dx.doi.org/10.1016/j.jad.2017.09.028>

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Aberrant resting-state cerebellar blood flow in major depression

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Abstract

Background:

Abnormal cortical cerebral blood flow and gray matter volume have been frequently reported in patients with major depressive disorder (MDD). In contrast, although the role of the cerebellum in MDD pathophysiology has attracted considerable interest more recently, studies investigating both functional and structural aspects of cerebellar integrity are scarce.

Methods:

In this study, we used structural and functional magnetic resonance imaging (MRI) to investigate cerebellar volume and regional cerebellar blood flow (rCBF) at rest in clinically acute MDD patients (n=22) and healthy controls (n=18). We acquired high-resolution structural images at 3 Tesla together with perfusion images obtained with continuous arterial spin labeling. Cerebellar structure and function were investigated using cerebellum-optimized analysis techniques.

Results:

Markedly increased rCBF was found in bilateral cerebellar areas VIIa and VIIIb ($p < 0.05$ family-wise-error [FWE] corrected). Significant differences in cerebellar volume between patients and controls were not found ($p < 0.05$, FWE-corrected). **Left cerebellar area VIIa perfusion was**

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