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General and emotion-specific neural effects of ketamine during emotional memory formation

Benjamin Becker\textsuperscript{a,b,*}, Maria Steffens\textsuperscript{c}, Zhiying Zhao\textsuperscript{a}, Keith M. Kendrick\textsuperscript{a}, Claudia Neumann\textsuperscript{d}, Bernd Weber\textsuperscript{e,f}, Johannes Schultz\textsuperscript{b}, Mitul A. Mehta\textsuperscript{g}, Ulrich Ettinger\textsuperscript{e}, Rene Hurlemann\textsuperscript{b**}

\textsuperscript{a}Key Laboratory for NeuroInformation, School of Life Science, Center for Information in Medicine, University of Electronic Science and Technology of China, Chengdu, China
\textsuperscript{b}Department of Psychiatry and Division of Medical Psychology, University of Bonn, Bonn, Germany
\textsuperscript{c}Department of Psychology, University of Bonn, Bonn, Germany
\textsuperscript{d}Department of Anesthesiology, University of Bonn, Bonn, Germany
\textsuperscript{e}Center for Economics and Neuroscience and Department of Epileptology, University of Bonn, Bonn, Germany
\textsuperscript{f}Department of NeuroCognition/Imaging, Life&Brain Research Center, Bonn, Germany
\textsuperscript{g}Department of Neuroimaging, Institute of Psychiatry, Psychology and Neuroscience, King's College London, London, UK

ben_becker@gmx.de
renehurlemann@me.com

\*Corresponding author at: Benjamin Becker Center for Information in Medicine, University of Electronic Science and Technology Xiyuan Ave No 2006, 611731 Chengdu, China. Tel: +86 2861 830 811; Fax: +86 2861 830 811

**Correspondence to: Rene Hurlemann Division of Medical Psychology, University of Bonn Sigmund-Freud-Str. 25, 53105 Bonn, Germany. Tel +49 228 287 19124; Fax +49 228 287 19125

Abstract

Animal studies suggest that N-methyl-D-aspartate receptor (NMDAR) dependent signalling in limbic and prefrontal regions is critically involved in both cognitive and emotional functions. In humans, ketamine-induced transient, and disorder associated chronic NMDAR hypofunction (i.e. in schizophrenia) has been associated with deficient performance in the domains of memory and higher-order emotional functioning, as well as altered neural activity in the underlying limbic-prefrontal circuits. To model the effects of NMDAR hypofunction on the integration of emotion and cognition the present pharmacological fMRI study applied the NMDAR antagonist ketamine (target plasma level = 100ng/ml) to 21 healthy volunteers in a within-subject placebo-controlled crossover
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