

Structural MRI studies of limbic system and other relative brain regions among young adult methamphetamine users

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Background: The abuse of amphetamine-type-stimulants (ATS) represented by methamphetamine (MA) is becoming increasingly popular year by year. Compared with some traditional drugs, MA has a characteristic of strong psychological dependence and obvious neurotoxicity. Depression is the most common co-morbidity axis I disorder for individuals with MA abusers. The present study aims to compare the structure changes of limbic system and other relative brain regions of young adult MA users with control group and the relationship between structure changes with depression symptoms.

Methods: 29 MA users aged between 18-25 years who met the criteria of Diagnostic and Statistical Manual of Mental Disorder (DSM-IV) and 21 matched healthy control subjects participated in the study. We collected the clinical data, including generalized information questionnaire, the information of drug use, questionnaires as HAMD-24, HAMA, PANSS in order to understand their psychiatric syndromes and mood symptoms. Then, we performed 3T magnetic resonance imaging (MRI) scans of the brains of the experimental group and the control group to find the structure impairment in some certain brain regions.

Result: MA group have obvious mood disorder such as depression and anxiety which is significantly different from the healthy group ($P < 0.05$). MA group have larger left amygdala volume, Right-Caudate volume, left-caudate volume, and gray matter total volume with comparing to control group ($P < 0.05$).

Conclusion: There are structural abnormality in some relative brain regions of MA users. In the future study, fMRI should be performed to explore the functional changes of the brain regions that have structural abnormality, so that we could provide more evidence for better clinical treatment plan.

Biography

Jing Li is a Professor of the department of Psychiatry, Mental Health Centre of West China Hospital at Sichuan University, China. She is research director of the Division of Substance Abuse at West China Hospital, the assistant editor of *Addiction*, the deputy secretary of Chinese Association of Drug Abuse Prevention and Treatment, and the director of national clinic trial centre of narcotic control medicine of West China Hospital. She has been supported by a series Research Scientist Award from the Ministry of Science and Technology, the Ministry of Health of China since 2000. Her current researches mainly focus on substance dependence and psychopharmacology, including evidence-based treatment on alcohol, ATS and heroin dependence, effect of traditional Chinese medicine, clinical trial of narcotic control medicine, and neuroimaging studies. She has published over 100 papers, books and reviews.

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