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INVOLVEMENT OF LIMBIC-DIENCEPHALIC CIRCUITS IN ALCOHOLICS WITH COGNITIVE DECLINE: AN MRI STUDY BY VOXEL-BASED MORPHOMETRIC ANALYSIS (VBM)

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Although alcohol-related dementia occurs under ethanol intoxication with coexisting nutritional deficiency, the culprit lesions for cognitive decline of alcoholics remain fully unexplored. After consecutively recruited 113 alcoholics (54.6 ± 6.5 years old) was divided into an alcoholic with cognitive decline group (ALD, n = 58) and cognitively normal alcoholic group (ALN, n = 55), VBM for automatic detection of gray matter and SPM software for the analysis were used to make two sets of comparisons, one between a normal control group (n = 60) and the ALN, and the other between the ALN and ALD. The ALD was older with a longer duration of alcohol dependence and had a lower BMI than the ALN. The gray matter volume of the alcoholics was lower than that of the controls and it was negatively correlated with age. The ALN had more enlarged sylvian/longitudinal fissures and third/lateral ventricles, and a more atrophic in the frontal/temporal lobes and cerebellum than the control group. Parahippocampal/hippocampal atrophy was specific to ALD and atrophy of the thalamus and enlargement of the third ventricle were more severe in the ALD group than in the ALN group. The parahippocampal and hippocampal cortices may play a crucial role in the retention of short-memory in alcoholics.