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Combined resting state functional magnetic resonance imaging and diffusion tensor imaging study in patients with idiopathic restless legs syndrome

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ABSTRACT

Objective: Restless legs syndrome (RLS) is a common neurological disorder characterized by an urge to move the legs along with paraesthesia deep within them. In this study, we aimed to use diffusion tensor imaging (DTI) and regional homogeneity (ReHo) to investigate the changes in regional spontaneous brain activity change for RLS patients against age- and gender-matched normal control (NC) subjects.

Methods: A total of 35 RLS patients and 27 age- and gender-matched NC subjects were recruited for group comparison research that used DTI and ReHo techniques. DTI was analysed by FSL and tract-based spatial statistics (TBSS) software to measure the values of fractional anisotropy (FA) or mean diffusivity (MD) in brain regions. Statistical Parametric Mapping 8 (SPM8) was used for data preprocessing and Data Processing Assistant for Resting-State fMRI (DPARSF) toolbox was used for ReHo calculation. For multiple comparison correction, the AlphaSim program implemented in AFNI was used to control the false-positive rate (corrected $p<0.05$).

Results: There was no significant difference between the iRLS and NC groups in

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