Poster

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Poster 37

[P-37-04] Validation the priority of Fixel-based Analysis of white matter alterations in drug-naïve patients with schizophrenia

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Background: Previous Diffusion Tensor imaging (DTI) studies have found inconclusive white matter (WM) abnormalities in individuals with schizophrenia (SZ), and this may attribute to the limitations of DTI method. Fixel-based Analysis (FBA) is a recently developed method with advantages in assessing more biologically specific WM structures, and it is rarely applied in SZ Magnetic Resonance Imaging (MRI) researches. **Methods:** Diffusion MRI data were collected from 94 drug-naïve, first episode schizophrenia (FES) individuals and 114 healthy controls. MRI metrics including fractional anisotropy (FA), mean diffusivity (MD), fibre density (FD), fibre-bundle cross-section (FC), fibre density and fibre-bundle cross-section (FDC) were extracted. Group comparisons of these measures were conducted using Multivariate General Linear Model with age, gender, and years of education as covariates. Correlation analyses of MRI metrics with clinical variables were conducted. **Results:** We found only 6 bundles with altered FA, 34 with altered MD, 46 with altered FD, 29 with altered FC (log10-transformed, log(FC)), and 52 with altered FDC. No correlation of MRI metrics with clinical characteristics was found. **Conclusions:** This study strongly highlights the remarkable advantages of the FBA method to reveal the alterations of WM microstructures in individuals with schizophrenia.