

P02-323

STUDY OF BRAIN ASYMMETRIES IN SPORADIC AND FAMILIAL FIRST EPISODE PATIENTS WITH SCHIZOPHRENIA

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Introduction: Although the deviations of brain volume deficits in sporadic and familial first-episode schizophrenia patients (FEP) had been presented, the difference of brain asymmetries remained unidentified.

Objectives: To assess the potential differences of volumetric asymmetries of gray matter (GM) and white matter (WM) between groups.

Aims: To find out the different injury alteration of sporadic FEP and familial FEP.

Methods: 42 sporadic and 30 familiar drug-naïve FEP with and 72 matched normal controls (NC) were recruited. Participants were assessed with neuropsychological tests and scanned by a 3.0T MRI to obtain T1-weighted and DTI images. Lateralization distribution maps of GM and WM volume were generated by employing optimized voxel-based morphometry. The asymmetries were analyzed by comparing calculating Laterality Index (LI) voxel by voxel.

Results: All three groups showed similar overall brain torque. Familiar FEP have more regional extensive GM asymmetry brain lesions compared to sporadic FEP. There was no shared regional lesion between two groups. LI_{GM} and LI_{WM} in right superior temporal were negatively correlated. Significant negative correlations were also found between LI_{GM} of left superior parietal lobule and LI_{WM} of right superior parietal lobule, and between LI_{GM} of right inferior parietal lobule and LI_{WM} of left inferior parietal lobule. The asymmetry in distinct brain regions were related to cognitive deficits especially in the domains of language and memory.

Conclusions: The two patient groups had different alteration in injuries of brain asymmetry. Familiar FEP has more GM extensive asymmetry brain region, which may correlate with their high genetic burdens.