

Evidence for a distinct depression-type schizophrenia: a pilot study

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Dear Editor,

Reciprocity of depressive and psychotic symptoms in patients with schizophrenia and major depression disorder (MDD), respectively, complicates differential psychiatric diagnosis. Notably, 60%-70% of schizophrenia patients experience moderate to severe depressive symptoms¹⁻³. Indeed, schizophrenia and MDD have been proposed to be variants of the same disorder, namely major psychiatric disorder¹. Notwithstanding, distinct functional brain characteristics of these two patient groups have been demonstrated². Additionally, patients with schizophrenia and MDD have been reported to have reduced and increased corpus callosum (CC) sizes, respectively³⁻⁵. Thus, we have hypothesized that there may be a depressive-type schizophrenia.

This study was approved by the ethical committee of The Tianjin Mental Health Center. All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. Written informed consent was obtained from participants and their guardians.

We used magnetic resonance imaging (MRI) and tract-based spatial statistics (TBSS) to compare the CCs of first-episode drug-naïve schizophrenia patients with (FE-SCZ-D) versus without (FE-SCZ-nD) depressive symptoms (N = 15/group), matched for demographics and symptom severity, and 20 healthy controls (HCs) who served as a reference group. None of the participants had a family history of mental illness. Their mean ages ± standard deviations (SDs) by group were: FE-SCZ-D, 24.5 ± 4.5 years; FE-SCZ-nD, 23.5 ± 2.5 years; and HC, 24.5 ± 3.5 years (R = 0.557; p = 0.405). The gender ratios of the groups were (males/females): FE-SCZ-D, 8/7; FE-SCZ-nD, 9/6; and HC, 7/8 (p = 0.265). The FE-SCZ-D and FE-SCZ-nD groups had mean (±SD) illness durations of 2.3 ± 1.2 months and 2.8

± 1.4 months, respectively (R = 0.362; p = 0.265). The FE-SCZ-D and FE-SCZ-nD groups had mean (±SD) Positive and Negative Syndrome Scale scores of 80.0 ± 19.0 and 82.6 ± 17.7, respectively (R = 0.523; p = 0.799), and they had mean (±SD) Calgary Depression Scale for Schizophrenia scores of 15.5 ± 1.5 and 0.0 ± 0.0, respectively. This pilot study was completed from January 1st to December 31st of 2018. All participants volunteered and gave written informed consent; the Wenzhou Seventh People's Hospital provided ethics approval.

TBSS analysis of MRI data showed more pronounced CC reductions in the FE-SCZ-nD group than in the FE-SCZ-D group; both schizophrenic patient groups had reduced CCs relative to HCs (Figure 1). Hence, the presence of depressive symptoms seemed to

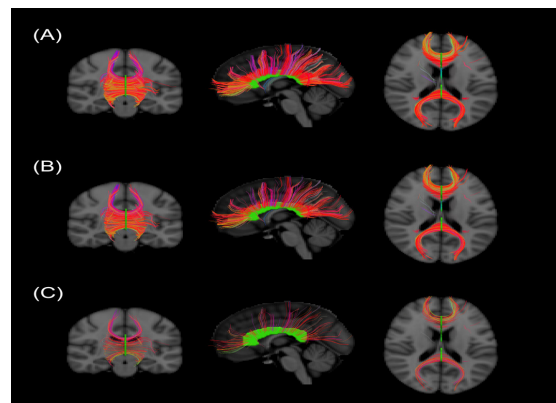


Figure 1. TBSS-based comparison of MRI examinations of white matter structures, especially CC connections, between a HC reference group (A), FE-SCZ-D patients (B), and FE-SCZ-nD patients (C).

counter, or perhaps be a protective factor against, CC reduction in patients with schizophrenia. These findings are consistent with our hypothesis that there may be a distinct depression-type schizophrenia.

Limitations of this study included a small sample size, all patients being inpatients (due to imperative auditory hallucinations) who refused antipsychotic treatment prior to hospitalization, participant loss (6 per patient group) due to MRI noncompliance, and limited-resolution images. Larger-cohort and multi-center studies with more subtle neuroimaging are needed to clarify brain alterations related to psychosis and depressiveness.

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Conflict of interests

None.

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