Abnormal Connectivity in Medial Prefrontal Cortex in Schizophrenia Patients and Unaffected Relatives

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Objectives

The aim of this study is to explore connectivity between Medial Prefrontal Cortex and others areas of the Default Mode Network, by Functional Magnetic Resonance Imaging during Resting State, in subjects affected by schizophrenia and unaffected relatives.

Methods

We recruited a group of 29 patients diagnosed with schizophrenia, who were treated with atypical antipsychotics, who are and were clinically stable in the last 6 months and had an illness duration range from 5 up to 15 years. Patients who had received either electroconvulsive therapy or clozapine were excluded. We also recruited a group of 23 unaffected relatives, without history of other mental, neurological or somatic disease and a group of 37 healthy volunteers. No subject in any of the three groups met criteria for substance use disorders.

All three groups were clinically evaluated, and a functional magnetic resonance during Resting State was performed.

Functional images were reoriented to the first scan, normalized to the MNI EPI template and smoothed with an 8 mm Gaussian kernel, with SPM. The CONN- FMRI Toolbox v1.2 was used to create individual subject seed-to-voxel connectivity maps, to the corresponding seeds of the default mode network.

Conclusions

There are significant differences in the connectivity between the Medial Prefrontal Cortex and the Default Mode Network in patients with schizophrenia and the unaffected relatives.