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FUNCTIONAL RESTING-STATE DYSCONNECTIVITY IN SCHIZOPHRENIC PATIENTS WITH PERSISTENT AUDITORY VERBAL HALLUCINATIONS

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Introduction: Previous functional neuroimaging studies in schizophrenia have suggested abnormal patterns of functional connectivity during the resting state. However, little is known about the relationship between specific symptom dimensions and resting-state network (RSN) connectivity.

Objectives: Using fMRI, this study investigated the relationship between multiple RSN and auditory verbal hallucinations (AVH) in patients with schizophrenia.

Methods: Resting state data were acquired from 10 patients with treatment resistant AVH and 14 healthy controls. The data were analyzed using a spatial group independent component analysis, and random effects t-tests were used to compare spatial components between groups ($p < 0.001$).

Results: 16 RSN were identified, from which four networks were selected for further analyses. Within three RSN patients showed increased connectivity of right lateral prefrontal areas and bilateral superior temporal regions as well as decreased connectivity of the anterior cingulate cortex. Correlations were found between measures of AVH severity and functional connectivity of the left anterior cingulate, left superior temporal gyrus and the right lateral prefrontal cortex.

Conclusions: These findings indicate that functional changes of multiple RSN associated with language processing, attention and executive control could underlie persistent AVH in patients with schizophrenia. The relationship between AVH severity and functional connectivity measures suggests that distinct cortical loci of dysfunction could contribute to the phenomenological diversity of AVH.