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EXPLORATION OF IRONY COMPREHENSION IN SCHIZOPHRENIA WITH FMRI

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Introduction: Irony is a form of speech used to convey feelings in an indirect way.

Schizophrenic patients usually demonstrate impaired irony processing, associated with poor theory of mind.

Aims: We used fMRI to examine neural circuitry underlying deficits in understanding irony in schizophrenia.

Methods: 21 schizophrenic patients and 24 healthy subjects were studied. Short scenarios and three conditions were used: irony condition (IC), irony with linguistic help condition (IHC), and control condition (CC). We used event-related design. Scenarios started with a contextual part, followed by a 2-4s ISI. The ironic sentence appeared next, and a question followed. Between trials an ITI of 5-7s were used.

Results: Patients performed significantly worse in the conditions (IC:p=0.0003;IHC:p=0.0034;CC:p=0.0036). In the IC: patients activated the left insula, left anterior cingulum, right and left superior frontal gyrus (SFG), right middle frontal gyrus (MFG) during the contextual part, and activated the left inferior frontal gyrus (IFG), left middle temporal gyrus (MTG) and right superior temporal gyrus during the statement. In the IHC: patients activated the left precuneus, left IFG, left SFG, left and right MFG, right cuneus and left MTG during the context, and activated right SFG and left posterior cingulum during the statement.

Conclusions: Patients probably have an abnormal contextual processing and a missing activation of the theory of mind network during the interpretation of ironic statements. The given linguistic help proved to be efficient help for many patients in processing the context correctly, and in understanding ironic situations more successfully.