

AbstractID: 3351 Title: Working Memory Deficits of Facial Images in Patients with Schizophrenia using fMRI

Objectives: Impaired processing of facial information is one of the broad ranges of cognitive deficits seen in patients with schizophrenia. We aimed to elucidate the differences in brain activities involved in the process of facial working memory between schizophrenic patients and healthy comparison subjects.

Methods: Twelve patients with schizophrenia were recruited along with twelve demographically matched healthy volunteers as a comparison group. Functional magnetic resonance imaging (fMRI) was used to assess cortical activities during the performance of a 1-back working memory paradigm using images of neutral faces as mnemonic content.

Results: The patient group performed the tasks with reduced accuracy. Group analysis revealed that left fusiform gyrus, right superior frontal gyrus, bilateral middle frontal gyri/insula, left middle temporal gyrus, precuneus, quadrangular lobules and vermis of cerebellum and showed decreased cortical activities in the patient group. On the other hand, an increased level of activation in lateral prefrontal cortex and parietal lobule was observed from the patient group, all in the right hemisphere.

Conclusion: A decreased level of activity in the left fusiform gyrus among the patient group implicates inefficient processing of facial information. An increased level of activation in prefrontal and parietal neural networks from the patient group confirms earlier findings on the impaired working memory of patients with schizophrenia.