FUNCTIONAL ABNORMALITY OF THE EXTRASTRIATE BODY AREA DURING OBSERVATION OF SPORTS-RELATED ACTIONS IN CHRONIC SCHIZOPHRENIA

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Background: Exercise and sports are increasingly being implemented in the management of chronic schizophrenia. Recent studies have suggested that body-selective extrastriate body area (EBA) in the posterior temporal-occipital cortex is involved not only in static visual perception of body parts but also in planning, imagination and execution of actions. However, functional abnormality of the EBA in schizophrenia has yet to be investigated.

Methods: Using functional magnetic resonance imaging with a task designed to activate the EBA by goal-directed actions, we examined brain activation during observation of sports-related actions in patients with schizophrenia. Twelve schizophrenia patients (6 men and 6 women) and 12 age-sex-matched control participants participated in the study.

Results: Compared to controls, the patients with schizophrenia demonstrated significantly less activation in the EBA during observation of sports-related goal-directed actions. Furthermore, the EBA activation in patients was negatively correlated with the severity of negative and general psychopathology symptoms measured by the Positive and Negative Syndrome Scale (PANSS).

Conclusions: Dysfunction of the EBA might reflect a difficulty in representing dynamic aspects of human actions and might lead to impairments of simulation, learning and execution of actions in schizophrenia. Furthermore, these impairments might lead to impairments of understanding others’ actions, interpersonal communication, body awareness and overall physical activity manifested as negative symptoms and general psychopathology symptoms.