Abstract

When a person performs or perceive an action, in any modality, specific structures called mirror neurons are activated. The automatic activation of these neurons – the "mirror mechanism" – during action recognition may contribute to the common course of higher cognitive functions, such as imitation, empathy, social cognition and language. Schizophrenia is associated with a number of cognitive changes, some of which may be explained on the basis of possible mirror mechanism distortion. Using fMRI, our research firstly examined the connectivity of selected brain areas in groups of patients and healthy volunteers. Initial research has shown that there are significant differences in the connectivity of cortical and subcortical structures between patients and the control group. The language experiment also revealed significant differences in the brain activation between these two groups. The configuration chosen language experiment has proved, on a group of healthy volunteers using the applied stimulus of the differences in the brain activation based on the characteristics of cue words. Therefore, neuronal changes accompanying schizophrenic illness probably result in changes in brain function when processing complex stimuli and are also reflected in the overall preparedness for reactions.

Key words:

motor language coupling, mirror neurons, language, schizophrenia, fMRI