

P03-196

STRUCTURAL NEURAL CORRELATES OF MEMORY PERFORMANCE IN SCHIZOPHRENIA AS REVEALED BY CORTICAL THICKNESS

K. Sergerie¹, A.C. Evans², C. Lepage², M. Lepage¹

¹McGill and Douglas Mental Health University Institute, ²McGill and McConnell Brain Imaging Centre, Montreal, Canada

In addition to the positive and negative symptoms, schizophrenia is associated with a variety of cognitive impairments, and in particular with episodic memory deficits. Functional neuroimaging studies have begun exploring the potential neural correlates of memory deficits but there are few reports of structural brain abnormalities underlying memory impairment in schizophrenia. We investigated the potential association between morphological brain abnormalities as revealed by cortical thickness measures and episodic memory performance on a face recognition task. Differences in regional cortical thickness between 27 patients with a DSM-IV diagnosis of schizophrenia and 28 control matched subjects were investigated using MRI T1 images and computer image analysis (CIVET pipeline; Lerch and Evans, 2005). Cortical thickness was estimated as the shortest distance between the pial surface of the cerebral cortex and the white-matter/gray-matter interface surface at numerous points (40 962 vertices) across the cortical mantle. Consistent with previous studies, a group comparison revealed thinner cortex in the patient group relative to controls in the right prefrontal cortex and parahippocampal gyrus. Interestingly, a significant positive correlation between memory performance and cortical thickness of the anterior cingulate, bilaterally as well as the right parahippocampal gyrus was noted in the schizophrenia group. That is, the thinner the cortex in those regions, the more impaired the patients were in terms of memory performance as compared to healthy participants.