correlations between the anterior cingulate GMR and the negative symptom subscale of the BPRS (p < 0.05, r = -0.50). Both normal controls and schizophrenics had positive correlations between cingulate cortex GMR and semantic categorization of CVLT (p < 0.05, r = 0.45, p < 0.05, r = 0.50, respectively). The effect sizes between frontal and limbic structures will be compared.

156. FRONTAL AND TEMPORAL CORTEX FUNCTION IN SCHIZOPHRENIA DURING A MEMORY TASK

E.A. Hazlett, M.S. Buchsbaum, L. Shihabuddin, M.M. Haznedar, & M.K. Germans

Mount Sinai School of Medicine, New York, NY 10029

Several previous studies with both cerebral blood flow and positron emission tomography (PET) have found diminished functional activity in the lateral frontal and temporal cortex in schizophrenia. This study examined these same brain regions using PET with 18-F-deoxyglucose (FDG) in a completely new cohort of 19 patients with schizophrenia (mean age = 37.7, SD = 14.7) and 25 healthy matched controls (mean age = 36.5, SD = 13.2). Subjects were scanned with our new high-resolution (4.2-4.5 mm FWHM) scanner. Patients were off all psychoactive medications a minimum of 2 weeks. All subjects were screened by history, psychiatric interview, physical exam, and laboratory testing. Controls with a history of mental illness in a first-degree relative were excluded. During the FDG uptake period, all subjects performed a modified version of the California Verbal Learning Task (CVLT). This task was chosen as it is thought to involve: (1) the frontal lobe, important in short-term memory and executive function; including those involved in developing strategies for learning; and (2) the temporal lobe, important in long-term memory storage. The lateral cortex was measured using our stereotaxic atlas method with boxes placed in the superior, middle, and inferior gyrus of both the frontal and temporal lobes for both left and right hemisphere on three PET slices (41%, 34%, and 28% of brain height). Values were expressed in mean relative metabolic rate for the region of interest (box metabolic rate/whole slice metabolic rate) in order to correct for generalized effects and allow inferences about regionally specific brain areas. Preliminary results from a repeated-measures ANOVA indicate that while glucose metabolism in the lateral frontal lobe is significantly lower in the schizophrenics compared to the controls, it did not differ in the lateral temporal lobe (Group × Lobe interaction, F = 5.17, p = 0.028). Further, in the schizophrenic group, lower glucose metabolism in the frontal lobe was significantly correlated with higher BPRS Positive Symptom Composite Scores (r = -0.68, p < 0.01). These results extend our previous work and indicate that frontal lobe dysfunction is an important contributor to the pathophysiology of schizophrenia.

157. GLUCOSE METABOLIC RATE OF THE BASAL GANGLIA IN SCHIZOPHRENIA

L. Shihabuddin, M.S. Buchsbaum, M. Haznedar, E. Hazlett, C. Luu, & B. Seigel

Mount Sinai Medical Center, New York, NY 10029

Basal ganglia pathology has been implicated in schizophrenia in several postmortem and neuroimaging studies. The findings in these studies have been inconsistent. Most studies found decrease metabolic rates in the basal ganglia of schizophrenic patients. Positron emission tomography with fluorodeoxyglucose (FDG) was used to study the metabolic rate of the caudate and putamen in 19 schizophrenic patients (mean age = 37.7, SD = 14.7) off medications for at least 2 weeks and 25 normal controls (mean age = 36.5, SD = 13.2). During the FDG uptake period, all subjects performed the modified version of the California Verbal Learning Task (CVLT). This task involves the working memory and thus activates the frontal and temporal lobes. The glucose metabolic rates were determined using a stereotaxic method based on a template from the Matsui and Hirano atlas. The metabolic rates in the caudate and the putamen in the schizophrenic patients were significantly lower than those of the controls (p < 0.01), more on the right than on the left. In addition, there was loss of the normal left-right asymmetry in schizophrenics. Exploratory correlations showed higher Brief Psychiatric Rating Scale (BPRS) scores with increased metabolic rates in the basal ganglia of schizophrenics. These findings are further suggestive of right basal ganglia pathology in schizophrenia and are consistent with our previous findings that neuroleptics increased the metabolic rate in the right putamen in schizophrenics.

158. SINGLE TRIAL STROOP VERSUS STROOP CARD MEASUREMENTS IN SCHIZOPHRENIA


Clinical Cognitive Neuroscience Laboratory, Department of Psychiatry, University of Pittsburgh, Western Psychiatric Institute and Clinic, Pittsburgh PA, 15213

Discrepancies exist in the literature as to whether schizophrenia patients show increased interference (slowing of naming the colors of color-incongruent words such as RED printed in blue ink) on the Stroop task. Several early studies using Stroop cards reported increased interference; however, recent studies using computer-presented, single-trial versions of the task have not confirmed this finding. While patient factors such as clinical heterogeneity may account for these differences, they may also reflect the different psychometric properties of the procedures themselves. We administered both versions of the Stroop task to 40 chronically ill patients in an effort to test this latter hypothesis. On the single trial version of the task there was no evidence of increased interference. Interference scores on both versions did correlate with one another (p < 0.05); however, Stroop card interference correlated even more strongly with overall slowing of response times (p < 0.001) and neuroleptic dosage (p < 0.01), while there was no correlation between these nonspecific factors and single-trial Stroop interference. These results suggest that interference on both versions of the Stroop task do tap related cognitive processes; however performance on the card version is a less specific index of cognitive functioning and much more susceptible to the influence of nonspecific influences over performance than the single-trial task. These findings account for the discrepancies between Stroop Card studies and those using single-trial procedures and suggest that the single-trial finding of an absence of increased interference more reliably indexes this aspect of cognition in schizophrenia.

159. SPATIAL WORKING MEMORY PATHOLOGY AND NEGATIVE SYMPTOMS IN SCHIZOPHRENIA

C. Carter, L. Robertson, T. Nordahl, M. Chaderjian, L. Kraft, & L. O’Shora-Celaya

Department of Psychiatry, University of Pittsburgh; Departments of Psychiatry and Neurology, University of California at Davis, CA