54. TOUCH FEEL ILLUSION IN SCHIZOPHRENIC PATIENTS

A. Peled (1), M. Ritsner (1), S. Hirschmann (1), A.B. Geva (2), I. Modai (1)

(1) Sha’ar Menashe Mental Health Center, Mobile Post Hefer 38814, Israel, (2) Department of Electrical Engineering, Ben-Gurion University of the Negev, Israel

The rubber hand illusion (RHI) is a tactile sensation referred to an alien limb. The RHI has been explained by a spurious reconciliation of visual and tactile inputs reflecting functional connectivity in the brain and may be used to explore alternations of functional connectivity in schizophrenia. Twenty-six controls and 27 schizophrenic inpatients participated in this study. For the RHI subjects were seated with the left arm resting upon a small table. A standing screen was positioned beside the arm to hide it from view and a life-sized rubber model of a left hand was placed on the table directly in front of the subject. The subject was instructed to look at the artificial hand while two small paintbrushes were used to stroke the rubber hand and the subject’s hidden hand synchronously. After the occurrence of the illusion, subjects completed a two-part questionnaire providing a description of their experience, affirming or denying the occurrence of nine specific perceptual effects. Schizophrenics felt the illusion stronger and faster then did normal controls. Some RHI effects correlated with positive symptoms of schizophrenia, but not with negative symptoms. Based on this study we argue that altered functional integration of environmental inputs could constitute the basis for erroneous interpretations of reality, such as delusions and hallucinations.

55. ERP EVIDENCE OF FRONTAL/POSTERIOR DISCONNECTION IN SCHIZOPHRENIA

G.F. Potts

Rice University, Department of Psychology MS-25, 6100 Main Street, Houston, TX, 77030

Disruption of attention is a hallmark symptom of schizophrenia. Event-related potential (ERP) studies of attention in schizophrenia consistently report auditory, but not visual, P300 amplitude reductions. Monkey single-unit recording and human hemodynamic neuroimaging results suggest that selective attention requires interaction between posterior cortical areas of perceptual representation and attention networks in prefrontal cortex. The disconnection hypothesis of schizophrenia proposes a disruption in these frontal/posterior connections in the disease. Recent ERP studies of auditory and visual selective attention suggest that the Selection Negativity (SN) and Frontal Selection Positivity (FSP) may index frontal/posterior interaction in target detection. The SN (or N2) is an ERP index of selective attention over modality specific areas of posterior cortex. The SN is accompanied by a modality independent FSP over prefrontal cortex. Several studies have reported auditory N2 reduction or absence in schizophrenia, and the single study reporting the visual N2 in schizophrenia also found a reduction, despite an unaffected P300. To our knowledge there are no reports on the impact of schizophrenia on the FSP. Here we report dense-sensor array (64 channel) ERP data from auditory and visual attention tasks in schizophrenic patients and controls. In the auditory data the P300 is reduced and an SN/FSP is not apparent in the patients. In the visual data the SN/FSP is also greatly reduced or absent in the patients despite a preserved P300. These findings support a differential impact of schizophrenia on the neural systems indexed by the SN/FSP and are consistent with the disconnection hypothesis of schizophrenia.

56. VIRAL INFECTIONS AND CYTOKINE LEVELS IN “NONORGANIC” PSYCHOSES

B.N. Gangadhar, N. Janakiramaiah, V. Ravi, D.K. Subbakrishna

National Institute of Mental Health and Neurosciences, Bangalore, India 560 029

The effect of viral infections on immunomodulators (cytokines) in psychoses is uncertain. This is important in the context of abnormalities of cytokine levels in schizophrenia. Consenting, consecutive patients (n = 120) with DSM-IV schizophrenia or brief psychotic disorder were tested for viral antibodies to Cytomegalovirus, Herpes simplex (HSV), Mumps, Measles, Rubella, Varicella Zoster, Japanese Encephalitis (ELISA). Patients testing positive for HSV (HSV-positive, n = 21), positive to any other single virus (HSV-negative, n = 22) or negative to all viruses (viral-negative, n = 41) did not differ with respect to sex, age, diagnosis and psychopathology scores except PANSS positive syndrome score; HSV-positive and viral-negative groups had higher mean scores than the HSV-negative group (F = 3.2; df = 2.80; p = 0.047). Gamma interferon (IFN) and Interleukin-2 (IL-2) levels were assayed without knowledge of clinical and viral status. IFN levels were higher in HSV-negative group (n = 19) than in both HSV-positive (n = 19) and viral-negative (n = 22) groups (Kruskal Wallis; serum, p = 0.005; CSF, p = 0.012). IL-2 levels in the three groups (n = 14, 18 & 21 respectively), however, did not differ (serum, p = 0.69; CSF, p = 0.74). Symptom and immunomodulator status is different depending on the nature of viral infection. HSV failing to evoke a IFN elevation like other viruses, suggests that it may be a reactivation in the presence of psychoses. Being a relatively focal neuro-infection in temporal lobe it may not evoke lesser IFN response. Interestingly all HSV-positive patients were positive only in CSF.

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57. DONEPEZIL AUGMENTATION OF ANTIPSYCHOTICS IN SCHIZOPHRENIA: COGNITIVE AND fMRI EFFECTS


Department of Psychiatry and Behavioral Sciences, Medical University of South Carolina, 67 President Street, Room 502N, PO Box 250861 Charleston, SC 29425

Neurocognitive impairments in multiple domains are common in schizophrenia and are powerful predictors of functional impairments and poorer quality of life. We report the results of an ongoing double-blind, placebo controlled randomized crossover study of donepezil augmentation of both typical and atypical antipsychotics in stable outpatients with schizophrenia.

To date, during the IRB approved study protocol six subjects have had serial measurements of psychosis, mood and multiple cognitive measures at baseline (BL), and then in a random order after 3 months of placebo, and after 3 months of donepezil (DP). Four of these subjects also received serial echoplanar BOLD fMRI studies during a verbal fluency task (the Controlled Oral Word Association Test (COWAT) on a 1.5 Tesla scanner at the same timepoints.