antagonist haloperidol showed a comparable effect, while the partial agonist preclamol inhibited amphetamine-induced locomotor activity, but not apomorphine-induced climbing behavior.

Conclusion: In conclusion, bifeprunox shows a profile, consistent in many ways with that of existing antipsychotic agents, an ability to antagonize behaviors caused by dopamine agonists, but unlike dopamine antagonists, also able to stimulate dopaminergic receptors in situations where the dopaminergic tone is low, or dopamine receptors have become supersensitive.

Sunday, April 3, 2005

P-04. Poster Session: Psychotic disorders I

Chairperson(s): Anita Riecher-Rössler (Basel, Switzerland), Eva Meisenzahl (München, Germany)
18.00 - 19.30, Gasteig - Foyers

P-04-01

Chromosome 3q29: Possible Schizophrenia Susceptibility Region

A. Schosser, K. Fuchs, F. Leisch, U. Bailer, S. Kasper, W. Sieghart, K. Hornik, H. N. Aschauer. *Univ.hospital for Psychiatry Dep. of General Psychiatry, Vienna, Austria*

Objective: We recently published a follow-up linkage study (Schosser et al. 2004) within the chromosome 3q29 region in both schizophrenia and bipolar affective disorder families (highest NPL [non parametric lod] score Zall=1.93296, highest p-value=0.032166) after conducting a genome scan (Bailer et al. 2002), resulting in evidence for linkage of both disorders to this region (highest NPL score Zall=3.74, highest p-value=0.0003). Within the follow-up linkage analysis we also conducted subset analyses of the schizophrenia families separately, including the marker of highest linkage of our prior genome scan, resulting in evidence for linkage of schizophrenia to chromosome 3q29 (highest p-value=0.009155).

Methods: Using the same family sample of schizophrenia patients (n=33), we now genotyped five additional markers, spanning 2.6 cM (centiMorgan) within the region of highest linkage of our recently published follow-up linkage analysis, thus narrowing down our newly identified candidate region. Linkage analysis was performed using the GENEHUNTER program version 2.1_r3 beta.

Results: The most significant p value observed within this study was 0.031433 with both SNP marker rs1357289 and SNP marker rs3747672.

Conclusion: Within this additional fine-mapping of chromosome 3q29, we again found evidence for linkage of schizophrenia to this chromosomal region. The results of this study are in accordance with our previous linkage findings of schizophrenia to chromosome 3q29.

P-04-02

Identification of schizophrenia genes in an animal model for psychosis

A. Hartmann, J. Genius, I. Giegling, K. Freitag, K. Strimmer, J. Schäfer, H. Möller, D. Rujescu. *University of Munich LMU Psychiatry, Munich, Germany*

Objective: The psychotomimetic effects of noncompetitive N-methyl-D-aspartate (NMDA) receptor antagonists such as PCP and ketamine in healthy humans and their ability to exacerbate several psychotic symptoms in schizophrenic patients have promoted a view of schizophrenia as being related to an altered glutamatergic neurotransmission. Attempts to mimic these effects in rats have lead to the recognition of parallels between schizophrenia and molecular, cellular, functional and behavioral abnormalities in animals chronically treated with NMDA receptor antagonist MK801 in a low dosage.

Methods: We performed microarray analyses comparing the expression of 28.000 genes between MK801 treated rats and saline treated controls in order to identify candidate genes contributing to schizophrenia. We found several genes to be differentially expressed in hippocampus. Our findings demonstrate that a functional genomics approach can be applied in the identification of new and unexpected candidate genes for psychosis-related traits as well as confirm published data.

Results: We found several genes to be differentially expressed in hippocampus.

Conclusion: Our findings demonstrate that a functional genomics approach can be applied in the identification of new and unexpected candidate genes for psychosis-related traits as well as confirm published data.

P-04-03

Looking for susceptibility genes in schizophrenia

K. Thierfelder. *Dept. of Psychiatry, University of Munich, München, Germany*

There is evidence for a strong genetic component in the aetiology of schizophrenia, as demonstrated by family, twin and adoption studies. Several putative schizophrenia genes have been described recently. Some replication studies confirmed the association evidence, some did not. We examined whether genetic variations (SNPs) in six genes (COMT, PPP3CC, NRG1, AKT1, GRIA4, DAAO, g72) are associated with schizophrenia in a German population consisting of 366 patients and 367 healthy controls. The SNPs under investigation have been previously reported to be associated with schizophrenia in other samples. Single marker and haplotype analyses did not reveal an association with schizophrenia in our sample. Our findings do not support our initial hypothesis that the SNPs under investigation are associated with enhanced schizophrenia susceptibility in our sample of German origin

P-04-04

Psychotic disorders and genetic syndromes

W. Verhoeven, C. Van Ravenswaay - Arts, J. Tuerlings, S. Tuinier. *Vincent van Gogh Institute for Psychiatry, Venray, Netherlands*

Objective: In clinical practice, psychiatric examination does not include a detailed assessment of physical anomalies, neither a careful evaluation of the neurodevelopmental trajectory and the family load with intellectual disabilities. Although there is substantial evidence for a genetic aetiology of schizophrenia and for a higher prevalence of subnormal IQ in this disease, patients with a psychosis are as a rule not screened for chromosomal or monogenic disorders. It was demonstrated recently, however, that cytogenetic abnormalities have a prevalence up to 30% in a population with schizophrenia.

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Methods: Over the past years several chromosomal abnormalities could be demonstrated in patients admitted for a psychosis to a general psychiatric hospital. They comprised among others a deletion 22q11 (also known as velocardiofacial syndrome), a duplication of chromosome region (16)(p11.2→p12.1) and a de novo translocation (2;10)(p23;q22.1).

Results: In these three female patients minor facial dysmorphisms were present as well as mild mental retardation. All had a long history of relapsing psychiatric symptoms that were classified in a large variety of ways. Careful evaluation revealed a spectrum of cognitive deficits and impairments on various functional domains.

Conclusion: These findings justify the inclusion of a genetic check-up in case of borderline to mild intellectual disability in patients with a major mental disorder. Full karyotyping of individuals with psychotic illness, especially when accompanied by dysmorphic features or any congenital malformation and a family history of mental disorder is warranted.

P-04-05

An unusual combination of syndromes: XYY and PWS

W. Verhoeven, B. Hamel, S. Duffels, B. Otten, S. Tuinier. *Vincent van Gogh Institute for Psychiatry, Venray, Netherlands*

Objective: Presentation of an unusual combination of syndromes

Methods: The patient is a mentally retarded male aged 20 who was referred for long-lasting mood and behaviour disturbances. His history was characterised by premature birth, neonatal hypotonia and feeding problems. Because of hypogonadism and general hypotonia, chromosomal analysis was performed in the first month. A diagnosis of Klinefelter syndrome was established. His developmental trajectory showed persistent hypotonia, delayed milestones, compulsive rituals and weight gain. At the age of 10 a low testosteron level was demonstrated. At 16, further weight gain occurred. Length and weight were 1.69m and 76.8 kg. His psychological profile demonstrated impaired information processing and a mild mental retardation. In subsequent years his weight increased to 90kg accompanied by a diabetes mellitus for which the patient had to use insulin. He was treated with testosteron in a dose of 100mg i.m. once biweekly for one year. Additional genetic evaluation at 19 disclosed a Prader Willi syndrome (PWS).

Results: Neuropsychiatric examination showed the typical PWS psychiatric phenotype that includes neonatal hypotonia, feeding problems, delayed development, early obsessive compulsive symptoms, food seeking behaviour, affective instability and episodic challenging behaviours. In addition the patient complained about symptoms of narcolepsy, especially short sleep episodes in daytime.

Conclusion: Since the UPD etiology of PWS is associated with the occurrence of relapsing psychoses, genetic subtyping is essential.

P-04-06

Genetic syndromes and psychoses: The issue of schizophrenia

S. Tuinier, J. Tuerlings, B. Hamel, W. Verhoeven. *Vincent van Gogh Institute Dept. of Psychiatry, Venray, Netherlands*

Objective: Psychotic disorders can be demonstrated in a great variety of organic brain conditions such epilepsy, neurodegenerative disorders e.g. M. Huntington and Parkinson's disease, infections and endocrine disturbances. Although the symptomatology shows a considerable overlap with schizophrenia, this diagnostic vignette is never given. In mentally retarded patients with psychotic symptomatology, however, the reverse situation is common practice in that nearly always a diagnosis of schizophrenia is given. The view that symptom patterns carry information on aetiology was challenged already by Bonhoeffer in 1910 who suggested that the brain was endowed with few stereotyped mental reactions. These stereotypes are at present reflected in the diagnostic criteria of the DSM classification system. Factor analytical studies have demonstrated that these boundaries are virtually absent in real life.

Methods: With respect to psychotic disorders in mentally retarded patients, it has been conceptualized that genetic disorders may convey information about the genetic aetiology of schizophrenia. During the last decade, a large number of patients with chromosomal abnormalities have been described in whom a diagnosis of schizophrenia was made, suggesting promising gene localization. The latter, however, can only be demonstrated if schizophrenia has a high prevalence in such genetic syndromes and if specific genetic disorders are frequently present in patients with schizophrenia. Moreover, sporadic genetic syndromes can be of interest only in the presence of supportive data from linkage studies.

Results: An overview will be presented of the genetic syndromes associated with 'schizophrenia'.

P-04-07

Genetic liability to schizophrenia or bipolar disorder and its relationship to brain structure

A. McIntosh, D. Job, T. W. J Moorhead, L. Harrison, F. Karen, H. Sibley, E. Johnstone, S. Lawrie. *University of Edinburgh Division of Psychiatry, Edinburgh, United Kingdom*

Objective: Bipolar disorder and schizophrenia are highly heritable conditions that are associated with structural brain abnormalities. Although brain abnormalities are found in the well relatives of people with schizophrenia, the extent to which genetic liability relates to brain structure in either disorder is still unclear. This study sought to ascertain the effects of genetic liability to schizophrenia and bipolar disorder on white and grey matter volume in patients with these diagnoses and their well relatives.

Methods: Seventy-one patients and 72 unaffected relatives were recruited for the study. Patients included those with schizophrenia from families affected by schizophrenia alone, those with bipolar disorder from families affected by bipolar disorder alone and those with bipolar disorder from families affected by both bipolar disorder and schizophrenia. Samples of unaffected relatives of each patient group were also recruited. Subjects underwent an MRI scan of the brain which was analysed using optimised voxel-based morphometry. Grey and white matter volume was then related to a continuous measure of genetic liability based on a threshold-liability model.

Results: Genetic liability to schizophrenia was associated with decreased grey matter volume in dorso (DLPFC) and ventrolateral prefrontal (VLPFC) cortices. The relationship remained after diagnostic status had been taken into account. Complementary white matter changes were also demonstrated. No relationship was demonstrated between a genetic liability to bipolar disorder and either white or grey matter volume.

Conclusion: Genes that raise the likelihood of developing schizophrenia may exert their effects by diminishing grey matter

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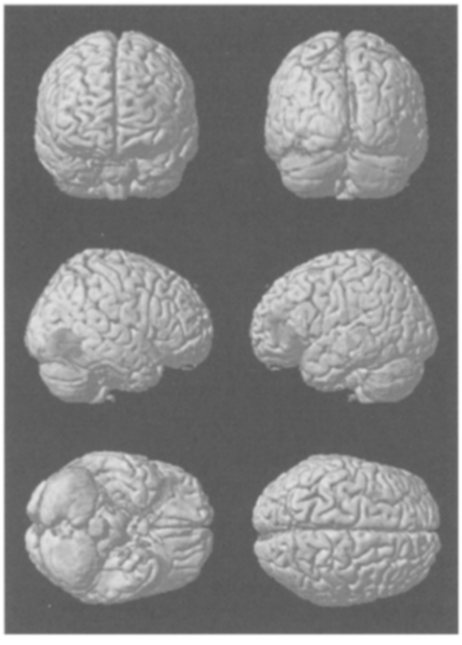
volume in the DLPFC and VLPFC and their associated white matter connections. Genes for bipolar may have particularly subtle effects on brain structure whoch may need particularly large sample to detect. Deficits related to genetic liability in bipolar disorder might be more fruitfully demonstrated using fMRI.

Figure showing areas of grey matter reduction associated with increasing genetic liability to schizophrenia:



P-04-08

Brain magnetic resonance imaging findings in individuals at-risk for schizophrenia

S. J. Borgwardt, J. Aston, M. Drewe, K. Götz, U. Gschwandtner, S. Haller, M. Pflüger, E.-W. Radü, R.-D. Stieglitz, E.-W. Radü, A. Riecher-Rössler. *University Hospital Basel, Basel, Switzerland*

Objective: The aim of this study was to investigate norm variants and pathological brain abnormalities in individuals at-risk for schizophrenia compared to patients with first-episode schizophrenia, healthy controls and depressive control patients, using structural MRI with T1 and T2 contrasts.

Methods: At the Psychiatic University Outpatient Department Basel a clinic for early detection of psychosis has been established. In a screening procedure, indicators and risk factors for schizophrenia (e.g. psychopathology, psychosocial factors and genetic risk) were assessed, then a comprehensive investigation was done (extensive early recognition interview, neuropsychological tests, EEG and MRI brain scan). For this study MRI scans were performed routinely in individuals at-risk for schizophrenia (IR; n=52) and compared to those of patients with first-episode psychosis (FE; n=30), depressive controls (DC; n=22), and healthy controls (HC; n=26). There was no significant difference in sex ratio and educational level between the groups.

Results: MRI scans showed a significantly higher proportion of brain abnormalities (norm variants and pathological abnormalities) in individuals at-risk for schizophrenia and patients with first-episode psychosis as compared to depressive and healthy controls.

Conclusion: Whereas the high amount of pathological abnormalities underlines the importance of brain imaging in an early detection clinic for clinical reasons, the high proportion of norm variants could provide further evidence for the neurodevelopmental hypothesis of schizophrenia.

P-04-09

In vivo imaging of the dopaminergic neurotransmitter system in an animal model

E. Meisenzahl, G. Schmitt, T. Zetzsche, T. Frodl, H.-J. Möller, C. la Fougere, K. Hahn, S. Dresel, M. Keck, M. Müller. *Psychiatrische Klinik der Ludw, München, Germany*

A cerebral neurotransmitter dysbalance is hypothesized to play an important role in schizophrenia: A tonic global glutamatergic deficit is completed by a phasic dopaminergic excess. The animal model is the most equivalent approach to analyze interaction between the both systems. Four main demands are made in the context of research in schizophrenia: Positiv- and negative symptoms should be modelled, transmitter interactions and structural imaging should become integrated in the experimental approach. Small animal imaging devices are mostly convenient for such studies. A small animal SPECT-device with ultra high resolution pinhole collimators is used to assess in vivo dopaminergic changes. Additionally, post mortem analysis is performed. Changes in dopaminergic and glutamatergic neurons, dendrites, and axons, and in GABAergic interneurons are analyzed. The in-vivo analysis of the CNS of Sprague-Dawley rats is performed by a dual-isotope SPECT protocol using combined application of [99mTc]TRODAT-1 and [123I]IBZM was performed. The investigation of the detailed biodistribution and specific binding will be presented

P-04-10

Voxel-based morphometry compared to regions-of-interest techniques in a cross-sectional MRI study of schizophrenic patients and healthy controls

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Objective: Since its beginnings in 1995 voxel-based morphometry (VBM) has been extensively used in the field of neuroimaging as a valuable tool for the analysis of structural brain differences among very different patient populations, suffering from neuropsychiatric conditions like chronic alcoholism, schizophrenia, Alzheimer's disease or major depression. VBM incorporates a series of preprocessing steps, e.g. spatial normalization, segmentation of gray and white matter partitions and smoothing, that allow to look at the local or regional composition of brain tissue after dicounting the global macroscopic shape of the brain. In a second step these local, intra- and interindividual differences are entered into different forms of voxelwise statistical analysis. All steps are executed by a set of fully automated algorithms, which are applied to the whole brain. Thus, the bias inherent to the older, interactive regions-of-interest methods (ROI) used in studies of unambiguous structures like hippocampi or ventricles could be reduced to a minimum. In contrast to the labour-intensive ROI techniques VBM is much faster and more reliable, as it depends only on the computational power of the research unit. Despite these advantages older regions-

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of-interest analysis tools still remain the gold standard in structural neuroimaging.

Methods: Our cross-sectional study design included 50 male schizophrenic patients and 50 healthy volunteers matched for age, gender, handedness and education. MR data collected from both populations has already been used by our workgroup in previous studies, that applied ROI techniques to predefined cortical structures, like the hippocampus and gyrus cinguli in different hypothesis-driven approaches. In this study we performed an optimized VBM analysis of the data based on the software package SPM2. Therefore we examined the structural differences in a first step throughout the cortices and used the small volume correction (SVC) tool of SPM in a second step for focusing on the brain structures mentioned above. Then, we statistically compared the results of this VBM analysis with the ROI-findings of previous studies.

Results: The global analysis showed structural differences between patients and controls bilaterally in the gyrus cinguli, the hippocampus, the insular regions, as well as in several temporal and frontal areas.

Conclusion: These results demonstrate that VBM is a scalable tool for the global, regional and local assessment of structural cortical alterations in psychiatric disorders. It is capable of validating previous ROI-findings.

P-04-11

Anterior cingulate gyrus in schizophrenic patients and controls: A structural magnetic resonance imaging evaluation

T. Zetzsche, D. Watz, T. Frodl, H.-J. Möller, G. Leinsinger, E. Meisenzahl. *Ludwig-Maximilians-University,, Munich, Germany*

Objective: The anterior cingulate gyrus (ACC) is part of the rostral limbic system and is involved in emotional and attentional functions that are known to be disturbed in schizophrenia. Despite actual emphasis of the importance of ACC abnormalities in schizophrenia, magnetic resonance imaging (MRI) studies of this region have given inconsistent results. One reason for discrepancies might be different definitions of ACC borders. For this reason we subdivided total ACC in several subregions and compared possible volume differences of gray matter between schizophrenic patients and healthy controls.

Methods: 50 male right-handed patients with schizophrenia and 50 controls were enrolled. All patients met criteria for schizophrenia according to DSM-IV and ICD-10. Controls were matched for age, sex, handedness and education. Psychopathology was assessed using PANSS and SANS. A 3-D MRI Scan with T1, T2 and PD sequences was performed for all 100 patients and controls. Volumes of ACC gray matter were measured on the consecutive coronal 1-mm structural MRI-slices interactively. Boundaries of ACC were defined as anterior tip of cingulate sulcus and slice at the middle of the corpus callosum. Total ACC was further divided into four subregions: subgenual, precallosal, precommissural and postcommissural.

Results: Volume of right ACC gray matter of precallosal subregion and total ACC without postcommissural subregion were significantly reduced in the schizophrenic patients compared to controls. Left ACC volume was selectively reduced in the subgenual part within the patient group. An inverse correlation was detected between left anterior cingulate size and severity of positive psychotic symptoms (PANSS). Main effects were found in the anterior parts of ACC.

Conclusion: Significant gray matter volume reductions in several ACC subregions were detected. In addition, inverse correlation between ACC volume and severity of psychotic symptoms was found. These findings suggest, that this part of the limbic system might play an important role in the pathogenesis of schizophrenia. Further studies of ACC structure - function relationships in schizophrenia are recommended.

P-04-12

Neuronal network disconnection in never-treated first- episode schizophrenic patients: An fMRI study

S. Ufer, M. Wiesmann, M. Käpernick, N. Kathmann, H. Brückmann, H.-J. Möller, E. Meisenzahl. *Ludwig-Maximilians-Universität Dept. of Psychiatry, München, Germany*

Objective: There is evidence that working memory (WM) is disturbed in schizophrenic patients. Using fMRI hypoactivity has been found in many studies in the dorsolateral prefrontal cortex (DLPFC) of schizophrenic patients during WM tasks. However findings are inconsistent. The aim of the study is to determine the neuronal correlates of working memory deficits in first-episode neuroleptic-naïve schizophrenic patients compared to healthy controls.

Methods: 12 right-handed, first-episode, neuroleptic-naive schizophrenic (according to DSM-IV) patients and 12 age, sex and parental education matched healthy controls were investigated by means of functional Magnetic Resonance Imaging (fMRI) while accomplishing a modified version of a continuous performance task (CPT). Behavioral task consisted in a verbal two-back paradigm which had regular conditions and conditions that required more alertness (2-back- and 0-back-degraded conditions). Blood oxygenation changes measured by fMRI of the patients were compared to those of the control group. Analysis was performed using SPM99 with a group analysis.

Results: We found a distributed neuronal network mediating verbal working memory including the DLPFC, parietal and cerebellar areas in both populations. In healthy subjects there was furthermore a hyperactivation in the VLPFC and the thalamus. Additionally the activation found in the parietal areas was greater in healthy controls than in schizophrenic subjects. Contrasting schizophrenic subjects and healthy controls revealed an increased activity in the left insula and the left superior temporal gyrus in patients only in the 2-back-degraded condition.

Conclusion: Discussion: Our results indicate a hypoactivation in prefrontal and parietal areas of schizophrenic patients while performing a 2-back working memory task. In the condition requiring more alertness schizophrenic patients showed hyperactivations in the superior temporal gyrus. This could be caused by a disordered connectivity in schizophrenic patients, which is already found at the beginning of the disease before treatment.

P-04-13

Functional cerebral dysfunctions in patients with catatonic schizophrenia: An fMRI evaluation

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Objective: 12 patients with catatonic schizophrenia and 12 age-, sex- and parental- education- matched healthy controls were

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examined with functional MRI while performing a motor task. The aim of our study was to identify the intracerebral pathophysiological correlates of motor symptoms in catatonic patients.

Methods: The motor task included 3 conditions arranged in a block design: a self-initiated (SI), an externally triggered (ET) and a rest condition. During the SI-condition subjects were ask to tap a keypad every 2- 7 seconds with their right index finger. Each button press created a short audible signal which was recorded on a PC outside the scanner. In the ET-condition these beep tones were played back and subjects pressed a button after each acoustical stimulus. During the rest condition subjects listened to the beep tones already played in the ET-condition without responding by motor movements. Statistical analysis was done with SPM 99.

Results: During the self-initiated movements patients showed significant less activation than healthy controls in the basalganglia (Pallidum, Putamen), the ventrolateral thalamus and the supplementary motor area (SMA).

Conclusion: Our results suggest a dysfunction of the "medial motor system" in catatonic patients. Self-initiated and externally triggered movements are mediated by different motor loops. The "medial loop" includes the SMA, the Thalamus and the Basalganglia and is necessary for self-initiated movements. The "lateral loop" includes parts of the Cerebellum, the lateral premotor cortex, the Thalamus and parietal association areas and is involved in the execution of externally triggered movements. Our findings are in agreement with earlier behavioural data which show deficits in self-initiated movements in catatonic patients whereas externally-triggered are movements are not impaired.

P-04-14

Are interhemispheric interactions abnormal in schizophrenics?

V. Florio. *Ospedale Generale Regionale di Bolzano, Bolzano, Italy*

Background: A behavioural measure of the interhemispheric integration of visual stimuli is represented by the redundant signal effect (RSE). In an RSE paradigm subjects have to react as quickly as possible to randomly presented single or double stimuli. Typically reaction times (RTs) are faster when two stimuli are simultaneously presented instead of just one (e.g. Cavina-Pratesi et al. 2001), and this advantage is called redundancy gain. In normal subjects the redundancy gain, that is the difference in RT between single- and double-targets, ranges between 15-20 ms. Interestingly, patients with a section or agenesis of the corpus callosum in whom IT time is abnormally prolonged, have a paradoxically enlarged redundancy gain (Marzi et al., 1997). To try and assess whether callosal IT is abnormal in schizophrenia we carried out an experiment with normal subjects and schizophrenic patients using the RSE paradigm. Method: 30 medicated schizophrenic patients and 28 matched controls were presented with small unstructured single and double visual stimuli either to the right or to the left visual hemifield. Subjects were asked to press the space-bar of the PC keyboard with the index-finger of their right or the left hand as quickly as possible. Results: RT scores were statistically analysed with a mixed two-ways ANOVA with Stimulus Numerosity (singles vs. doubles) as a within factor and Group as a between factor. The main effect of Stimulus Numerosity was significant ($F(1,56)= 284.543$, $p < 0.001$) with double stimuli yielding reliably faster RTs (348.21 ms) than single stimuli (369.92 ms). The main effect of Group was also significant ($F(1,56)= 31.158$, $p < 0.001$) with patients reacting slower (403.41 ms) than normal subjects (314.72 ms). Importantly, the interaction between Stimulus Numerosity (i.e. the redundancy gain) and Group was close to significance ($F(1,56)= 3.231$, $p = 0.07$) with a redundancy gain for schizophrenic patients (24.02 ms) greater than that for normal subjects (19.40 ms). Conclusions: Even though to a minor extent with respect to patients lacking the corpus callosum, schizophrenic patients have an enlarged redundancy gain with respect to normals. References: Cavina-Pratesi, C., Bricolo, E., Prior, M., & Marzi, C. A. (2001). Redundancy gain in the stop-signal paradigm: implications for the locus of coactivation in simple reaction time. Journal of Experimental Psychology: Human Perception and Performance, 27(4), 932-941. Marzi, C. A., Fanini, A., Girelli, M., Ipata, A. E., Miniussi, C., Smania, N., & Prior, M. (1997). Is extinction following parietal damage an interhemispheric disconnection phenomenon? In P. Thier & H. O. Karnath, Parietal lobe contribution to orientation in 3D space, Experimental Brain Research Series (pp. 431-445). Hweidelberg: Springler-Verlag.

P-04-15

Palinacousis leading to the diagnosis of temporal lobe seizures in a patient with schizophrenia

C. Prueter, T. D. Waberski, C. Norra, K. Podoll, H. Sass. *Hospital Maria Hilf Psychiatry and Neurology, Gangelt, Germany*

Objective: Palinacousis is a rarely reported symptom of temporal lobe dysfunction. Especially in psychiatric patients it may be misdiagnosed if it is not differentiated from the auditory hallucinations of psychotic illness. We report the case of a 20- year-old patient with the previously established diagnosis of paranoid schizophrenia who presented with the symptom of palinacousis.

Methods: The 20- year- old woman presented with the complaint of disturbing auditory sensations. She reported that she began hearing songs for up to 3 hours repeatedly during the day four weeks prior to admission. These melodies did not arise spontaneously, but represented songs the patient had heard in the radio during the preceding minutes. CCT and MRI scans were normal, FDG-PET revealed normal glucose metabolism. Repeated EEG recordings showed normal alpha rhythm with a left temporal theta focus.

Results: To substantiate the diagnosis of temporal lobe epilepsy source reconstruction by means of dipole modelling of the Scalp-EEG was applied. A spatio-temporal dipole modeling strategy was applied by means of BESA (MEGIS Software GmbH, Munich, Germany). Source reconstruction of the interictual spike activity yield to a left mesio-temporal focus. We continued started a treatment with carbamazepine 200mg/d. After increasing the dosage to 600 mg/d over 3 weeks the patient reported that the perserverating acoustic sensations were receding and EEG showed only an inconsistent left temporal theta focus. The dosage of carbamazepine was then increased to 800 mg/d.Upon discharge the patient was fully recovered and her EEG showed no further abnormalities.

Conclusion: Like the patients in the reported casesn literature our patient showed no symptoms of the previous psychiatric disease. Furthermore the reported auditory sensations showed important differences to the auditory hallucinations of psychotic illness.We were able to localize an epileptogenic focus in the left

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temporal lobe.We consider it as reasonable to establish the diagnosis of temporal lobe seizures in our patient patient.

P-04-16

The influence of emotional prosody on semantic processing in patients with schizophrenia: a study with ERP

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Objective: Patients with schizophrenia and paranoid delusions have demonstrated disturbances in semantic priming studies with event-related-potentials (ERP)and an cognitive bias for threatening and negative informations, combined with difficulties in emotion recognition

Methods: In this study patients with schizophrenia and healthy controlls perfomed a lexical decision task in a priming paradigma with emotional prosody while a the N400 ERP was recorded from a 32-channel EEG. All patients had chronic delusions but no formal thought disorder

Results: While patients showed prolonged latencies and increased amplitudes in contrast to the healthy controlls they could profit from the emotional priming in their semantic decision making

Conclusion: Patients with chronic delusions but no formal thought disorder are able to use emotional prosody for their decision making

P-04-17

P50 suppression in bipolar and schizophrenics patients

E. Sanchez Morla, M. A. Garcia Jimenez, J. Martinez Mena, R. M. Sanchez Honrrubia, V. Martinez-Vizcaico, M. Solera, J. L. Santos. *Psychiatric Service Hospital Virgen de la Luz, Cuenca, Ecuador*

Objective: P50 suppression is an operational measure of sensory gating and have been used to assess information processing. P50 suppression is assessed by measuring electroencephalographic responses to repeated pairs of clicks separated by about 500 msec. Schizophrenics and acutely bipolar patients have deficient P50 suppression (higher amplitude in response to S2 vs S1) but not in stabilized bipolar patients. To determine P50 suppression in euthymic bipolar patients and schizophrenics, in comparison to a healthy control group.

Methods: 59 healthy subjects, 80 bipolar (DSM-IV/SCID) patients and 85 schizophrenics (DSM-IV/SCID) were evaluated using the Montgomery Asberg Depression Rating Scale, Hamilton Depression Rating Scale (HDRS-17. ítems), the Young Mania Rating Scale (YMRS) and the Positive and Negative Sindrome Scale (PANSS). The bipolar patients were euthymic during at least a previous period of three months (<7 HDRS and YMRS).

Results: P50 suppression is deficient (no amplitude atenuation in response to S2 vs S1) in euthymic bipolar subjects and schizophrenics in comparison to the control group ($p<.0001$). There are no differences in the P50 suppression between the schizophrenic patients with deficit syndrome and those without this deficit syndrome.

Conclusion: The inhibitory mechanism that influence in the information processing is impaired in the bipolar illness and schizophrenia.

P-04-18

Neuropsychological function in schizophrenia and bipolar disorder

E. Sanchez Morla, J. L. Santos, M. A. Prieto, M. Solera, M. Martinez-Abad, A. Aparicio, M. J. Vega, V. Martinez Vizcaino. *Psychiatric Service Hospital Virgen de la Luz, Cuenca, Ecuador*

Objective: To examine the neuropsychological performance in bipolar patients in comparison schizophrenics and healthy subjects.

Methods: Patients: 74 bipolar patients (DSM-IV / SCID), euthymic over a period of 3 months; 80 schizophrenic outpatients, clinically estabilized. The schizophrenic patients were classified as with a deficit syndrome (following Carpenter criteria) and without this deficit syndrome. All patients were receiving pharmacological treatment. Controls: 67 healthy controls without history of psychiatric and neurological illness. Controls had no first-degree relatives with any psychiatric disorders. Neuropsychological assesment: 1) Estimated premorbid IQ: Vocabulary subtest of WAIS-III. 2) Frontal executive function: Wisconsin Card Sorting Test, Tower of Hanoi, Colour-Word Interference Test and Controlled Oral Word Association. 3) Attention-concentration: Trail Making Test, Digit subtest of WAIS-III, and CPT (DS-CPT, version 8.12). 4) Verbal learning and memory: California Verbal Learning Test. 5) Verbal memory: Rey-Osterriech Complex Figure (ROCF). The clinical evaluation was carried out by mean of Positive and Negative Syndrome Scale, Hamilton Depression Rating Scale and Young Mania Rating Scale.

Results: The schizophrenic and bipolar patients performed worse than controls in measures of executive function, attention-concentration, verbal memory and visual memory. The schizophrenic patients performed worse than bipolar patients only in measures of verbal learning. No differences were determined between bipolar patients and schizophrenics without deficit syndrome. Schizophrenics patients with deficit syndrome performed worse than bipolar patients in all neuropsychological measures.

Conclusion: 1) Bipolar and schizophrenics patients showed a global impairment in neuropsychological performance. 2) Differences across both groups are only cuantitative. 3) Schizophrenics with the deficit syndrome showed more neuropsychological impairment.

P-04-19

Psychopatologic dimensions and neurological soft signs in first-episodes psychosis

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Objective: To know the relation between the neurological soft signs (NSS) and the different PANSS dimensions in the first-episodes psychosis.

Methods: Subjects between 15 and 50 years attended first time in some of the devices of mental in south-Granada by a functional psychosis (ICD-10) untreated. Criteria of exclusion: Antecedents of epilepsy and cranial trauma. The patients were valued according to the PANSS. The appraisal of neurological soft symptoms (NSS) was carried out with Neurological Evaluation Scale (NES).

Results: During the 8 months of study, 27 subjects with criteria of first-psychosis episode were included. The patients that were dealt with antipsychotics did not present more NSS that the patients naives. The total scoring of NES was not correlated with none of

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the dimensions of the PANSS. Nevertheless the patients that presented an excess of NSS presented a greater presence of negative symptoms (1,7 vs. 2,5; p <0,02). Studying the associations between the different factors and the subscales was observed that sensory integration was correlated with negative and excitement factors. Motor sequence did it with negative factor.

Conclusion: The first-episode psychosis with an excess of neurological soft symptoms present more negative symptoms. This association is more evident in the subscales of sensitive integration and complex motor sequence.

P-04-20

Deficits in attention and executive functions in individuals at risk for schizophrenia

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Objective: To investigate the cognitive capacity of individuals at risk for schizophrenia (IR) compared to healthy controls (HC) and to determine a subset of cognitive functions which enables a non-redundant discrimination between the two groups.

Methods: N = 40 IR and N = 42 HC were matched for age, sex and handedness and assessed with a neuropsychological test battery. Five tests, providing nine measures were administered to assess attentional (CPT, TAP- Working Memory, TAP- Go/NoGo) and executive functions (WCST, ToH). These measures were adjusted for intelligence, education, and use of cannabis by means of multiple linear regression and z-transformed. Groups were compared using (M)ANOVA. A LOGIT regression procedure with backward stepwise elimination was then carried out in order to detect the subset of measures which best discriminate IR from HC.

Results: With these standardized measures a MANOVA yielded a general difference between IR and HC. In seven of nine measures statistically significant differences were found. HC always performed better than IR. By means of LOGIT regression, four variables were identified as the best discriminators. These were CPT false alarms, TAP- Go/NoGo false alarms, TAP-Working Memory missings, and TAP- Go/NoGo missings.

Conclusion: Both executive and attentional functions are impaired in IR. The best discrimination of IR from HC is achieved by assessing certain aspects of attention such as working memory and disinhibition.

P-04-21

Clinical, neuropsychological and neurophysiological deficits in first episode unmedicated schizophrenic patients (a pilot study)

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Objective: The aim of this study was to integrate clinical, neuropsychological and neurophysiological measures of first episode unmedicated schizophrenic patients as compared with a normal sample.

Methods: Four first-episode unmedicated patients with schizophrenia were consecutively recruited for this study from the Schizophrenia Unity of the Hospital of Bellvitge (Barcelona). All patients who were included met the DSM-IV criteria for schizophrenia or schizophreniforme psychoses. The psychopathological symptomatology was quantified with the Positive and Negative Symptoms Scale (PANSS) by a trained psychiatrist. None of the patients suffered from other psychiatric or somatic disorders. Subsequently, neuropsychological functions were explored by a complete battery, which contained executive functions, attention, verbal learning and memory, speed of information processing and semantic fluency. Finally, an Event-related Potentials paradigm was performed analysing early stages of auditory information processing and auditory sensory memory.

Results: All patients showed cognitive deficits in attention, verbal learning and memory, executive functions and speed of information processing. Also, patients showed a deficit in N1 amplitude reduction when an auditory repeated stimulus is presented within a short time period, thus indicating a deficit in auditory sensory processing as compared with control subjects.

Conclusion: The pilot study describes that schizophrenic naïf patients present an alteration to those functions that imply fronto-temporal correlates. Furthermore, same patients manifest a deficit in early stages of information processing when studied by Event-related Potentials. These results lead us to hypothesize that schizophrenia induces a deficit into different brain information processing stages.

P-04-22

An integrated neurophysiologic and neuropsychologic follow-up pilot study with first episode naïf schizophrenic patients: pre and post classical antipsychotic treatment

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Objective: The aim of this study was to integrate neurophysiological and speed processing information test Trail Making Test (Part A and B) in first episode naïf schizophrenia patients pre and post tryfluoperacine treatment.

Methods: Four first-episode unmedicated patients with schizophrenia were consecutively recruited for this study from the Schizophrenia Unity of the Hospital of Bellvitge (Barcelona). All patients who were included met the DSM-IV criteria for schizophrenia or schizophreniforme psychoses. The psychopathological symptomatology was quantified with the Positive and Negative Symptoms Scale (PANSS) by a trained psychiatrist. None of the patients suffered from other psychiatric or somatic disorders. Neuropsychological functions were explored by the Trail Making Test (TMT) (Part A and B). Evoked Potentials paradigm was performed analysing early auditory information processing and auditory sensory memory. Measures were made at the first basal recruitment and repeated after 20 days of tryfluoperacine treatment.

Results: All patients showed a deficit in the TMT, both parts A and B at the entrance to the hospital unity. However, patients' performance showed better results in both TMT parts (A and B) after 20 days of classical antipsychotic treatment. Event-Related Potential data showed a deficit in gating processes after repeated auditory stimuli in both pre and post-treatment. However, patients showed increased N1 amplitude when compared post to pre-treatment condition.

Conclusion: The pilot study points out that some early auditory brain information processing functions are altered in the first episode of schizophrenic patients. Furthermore, although more complex brain functions seem to be recovered, at some degree,

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after classical antipsychotic treatment, impairment of earlier stages of information processing could partially persist.

P-04-23

Sensorimotor and cognitive slowing in the symbol digit substitution test in schizophrenia

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Objective: It has been proposed that one or more of the cognitive deficits present in schizophrenia result from a more general slowing of mental and motor functions. The question whether this psychomotor slowing represents a general slowing or can be divided into different processes, and how these processes might relate to cognitive functioning is the object of the present study.

Methods: The slowing of processing speed (Brebion et al., 1998) has classically been investigated by use of a single measure of the Symbol Digit Substitution Test (SDST). Computerized recording and analysing of pen-tip movements during SDST performance allow us to differentiate matching time and writing time in this task, representing respectively the cognitive and sensorimotor component of slowing, and to correlate these new measures with classical neuropsychological tests. Thirty schizophrenic in-patients and 30 matched controls participated in this study.

Results: Both matching time and writing time were longer in schizophrenic patients and did not correlate. Only matching time correlated significantly with neuropsychological test results.

Conclusion: Schizophrenic patients display slowing in sensorimotor and cognitive processes, which are independent from each other. Only cognitive slowing and not sensorimotor slowing was related to dysfunctioning in most cognitive domains that were tested.

P-04-24

Does gender predict neuropsychological functioning in schizophrenic outpatients?

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Objective: To study possible gender differences in neuropsychological performance of schizophrenic outpatients.

Methods: Cross-sectional study with 90 patients that fulfill DSM-IV criteria for schizophrenia. Patients were administered a neuropsychological battery that included the Mini Mental Status Examination (MMSE), the Stroop Test, Trail Making Test A (TMTA) and B (TMTB), Wisconsin Card Sorting Test (WCST), FAS (semantic and phonemic verbal fluency), TAVEC (Spanish version of the California Verbal Learning Test) and the Continuous Performance Test (CPT).

Results: Gender distribution was 63,3% male (57 patients) and 36,7% female (33 patients). Mean age was 41,68 years (sd 11.89) not having found significant gender differences. Significant gender differences were found in some Verbal Memory tasks: total correct on trials 1 to 5 ($p=0.008$), use of semantic strategies in long delay ($p=0.028$) and immediate ($p=0.035$) recall, having females a better performance, as well as in phonemic verbal fluency tasks ($p=0.036$).

Conclusion: Our preliminary results seem to suggest that women with schizophrenia perform better in verbal memory and fluency tasks than schizophrenic men. On the other hand, we have not found significant gender differences in executive functioning nor attention.

P-04-25

Dermatoglyphics in patients with schizophrenia and bipolar affective disorder

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Objective: The study was designed to analyse the frequencies of occurrence of particular types of fingerprint patterns (dermatoglyphic pattern frequency) in patients with schizophrenia, bipolar affective disorder (ICD-10. criteria) and normal controls

Methods: Forty-eight patents with schizophrenia (ICD-10) (32 male, 16 female) and 28 patients with bipolar affective disorder (7 male, 21 female) were included. Their fingerprint patterns were compared to those of healthy controls. Fingerprints were obtained using the ink method. The quantitative and qualitative analysis of ridges on fingers was performed. All participants gave their written informed consent. The study was approved by the Ethics Committee in the University of Medical Sciences in Poznan

Results: Statistically significant differences in the fingerprint patterns were found between the patients with schizophrenia and controls. Among males with schizophrenia the increase of loops and decrease of arches and among females with schizophrenia - the increase of loops and decrease of whorls and arches were observed. In the group of female patients with bipolar disorders comparing to healthy women, significantly higher frequency of loops and lower frequency of arches were found. No significant differences in the frequencies of types of patterns on the finger pads (frequencies) between patients with schizophrenia and bipolar disorder were detected.

Conclusion: Our results point to abnormalities of fingerprint patterns in patients with schizophrenia and in female patients with bipolar affective disorder

Monday, April 4, 2005

P-08. Poster session: Psychotic disorders III

Chairperson(s): Hans-Jürgen Möller (München, Germany), Max Schmauß (Augsburg, Germany), Dieter Naber (Hamburg, Germany)
11.15 - 12.15, Gasteig - Foyers

P-08-01

Risperidone long-acting injectable in patients with a new diagnosis of psychosis

E. Parellada, W. Chrzanowski, R. Andrezina, V. Milanova, P. Glue, R. Medori, M. Masiak. *Hospital Clinic de Barcelona Escalera 9, 6 planta, Barcelona,. Spain*

Objective: Can efficacy and safety be maintained in psychotic patients diagnosed within the previous 3 years after a treatment change to risperidone long-acting injectable?

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