of re-education measure. It also provided a tool for monitoring their attitude towards the re-education measure and its implementation and the transfer of inmates with the expert team.

The authors hope this study will contribute in promoting visual arts therapy to the status it deserves and its introduction as a full-scale discipline in the implementation of individual prison sentence execution programme.

P399

Forensic evaluation of psychiatric disorders in epilepsy

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Objective of the study: Elaboration of the methodology of forensic psychiatric assessment and development of the system of expert evaluations of psychiatric disorders in epilepsy.

Material: 200 male offenders suffering from epilepsy.

Methods: Clinical, EEG and statistical analysis.

Results: The 4-stage of psychiatric disorders in epilepsy evaluation has been proposed: 1. Diagnosis. The choice of expert approach is determined by individual clinical picture and course of the disorders; character of prevailing psychiatric disorders - personality disorders, psychoses, dementia, paroxysmal states; 2. Finding out the cause and effect relationships. Revealing the psychopathological mechanisms of an offence and qualification of a principal syndrome at the moment of offence. 3. Situational analysis. Evaluation of an adequacy of perception of the situation by a patient, his chances to choose other ways of behavior; capability to foresee a result of his behavior; 3 Building an expert conclusion: comparing of the current clinical picture and psychopathological disorder at the moment of crime with medical and juridical criteria of the formulas of irresponsibility, diminished responsibility and criteria for involuntary hospitalization.

Conclusion: The proposed algorithm distinguishing different types of the relationships between psychopathological condition and criminal situation gives a possibility of precise evaluation of persons suffering from epilepsy. It takes into consideration the clinical diversity of psycho-pathological conditions that can differently contribute to the persons' responsibility.

P400

Diminished responsibility: some current issues in Russia

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The aim of the study: to evaluate the 10-years practice of forensic psychiatric assessment according to diminished responsibility in Russia.

Material: Accused offenders considered to be partially responsible for their actions under forensic psychiatric assessment in Serbsky Centre in 1996-2005.

Methods: Psychopathological, follow up.

Results: Diminished responsibility was introduced into the Russian legislation ten years ago only. The current experience demonstrates its active assimilation. Besides that, there is a distinctive specificity of its use determined by peculiarities of the object of assessment, i.e. by non-psychotic level of disorder and therefore not clearly apparent in evaluation. It became clear that in many cases all involved persons including the offender are not interested in this legal norm equally. It is a good possibility for officials (experts, judges, barristers) to take into consideration during investigation every important issue of legal case (psychological abnormality first of all). The advantage of being partially responsible for offenders is not so evident. Moreover according the follow up results this fact can be the discrediting information for a prisoner. The label of mental illness is well known obstacle and especially in custody where human values are rather specific and distorted.

Conclusion: In situation when a forensic psychiatrist realizes probability of labeling the person due making his own decision of partially responsible one more specific problem can arises for him - is it proved from ethical point of view to make such of decision or not? It can influence negatively the expert's professional activity in some cases.

Poster Session 2: BIOLOGICAL MARKERS AND BRAIN IMAGING

P305

Renaissance of quantitative electroencephalography (QEEG) in psychiatry

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Hundreds of QEEG-related papers brought new information about the temporal dynamics of complex neuronal interactions that underlie impaired processing in many psychiatric diagnoses. Besides this fact, many researchers, clinical psychiatrists and neuroscientists prefer new imaging techniques (Positron Emission Tomography, PET; and functional Magnetic Resonance, fMRI) even if they are based on an indirect index of brain computing as metabolic or hemodynamic measurements which are blind to millisecond phenomena. We present the results of our studies provided with QEEG techniques (Low Resolution Electromagnetic Tomography, LORETA; EEG coherence, EEG cordance) in: 1) more than 60 patients with schizophrenia examined by means of QEEG and PET. We found significantly lower EEG coherence values, mainly from the left frontotemporal derivations in patients group and there was also significant correlation between the decrease of frontotemporal EEG coherence and elevated glucose metabolic uptake in the limbic structures (posterior cingulate and hippocampus). LORETA analysis showed almost the same results as analysis of PET images, not only in basal disease process, but also after successful application of rTMS in the subgroup of patients with treatment-resistant auditory hallucination. 2) in more than 30 patients with resistant depressive disorder we computed the new EEG indicator value (EEG cordance), and we showed, that the decrease in prefrontal EEG cordance in theta frequency band may indicate early changes of prefrontal activity and can become a useful tool in the prediction of response to antidepressants.

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P306

Endophenotypic measures of altered inhibitory brain processes in ADHD

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Background and aims: Deficits in response inhibition are considered as candidate endophenotypes of altered prefrontal brain function in Attention Deficit Hyperactivity Disorder (ADHD). Electrophysiological methods like Event-Related Potentials (ERPs) are adequate to measure abnormalities in brain functions underlying those deficits and to assess functionally relevant polymorphisms directly affecting neurotransmission systems and brain function. This principle of imaging genomics with ERPs has been demonstrated as early as 1999 for the serotonin transporter promoter polymorphism affecting prefrontal brain function (Fallgatter et al., International Journal of Neuropsychopharmacology, 1999).

Methods: We employed a multi-channel EEG during performance of a Go-NoGo task to assess the electrophysiological basis of response inhibition. The ERP-measure derived from this protocol was termed NoGo-Anteriorisation (NGA) and is characterized by a high interindividual stability, high short- and long-term test-retest reliability and, moreover, is independent from age- and gender.

Results: In patients with ADHD during childhood and adulthood the NGA was diminished as compared to age- and sexmatched healthy controls. Furthermore, a three-dimensional source location analysis with LORETA indicated an electrical dysfunction of the ACC in the patient groups. Moreover, the 158 val/val variants of the COMT gene were associated with an even worse prefrontal brain function.

Conclusions: These results exemplify the measurement of disease related disturbances in brain function in ADHD with ERPs. Future studies will show whether such electrophysiological endophenotypes may contribute to the diagnosis of subgroups of ADHD and whether they may serve as endophenotypes to further clarify genetic contributions to the disease.

P307

Paired associate learning in subjects at risk for psychosis: fMRI study

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Background: Executive and mnemonic impairments have been well documented in the high-risk states for development of psychosis and have been pinpointed as a possible core neuropsychological dysfunction. However, their neurofunctional correlates are still not clear.

Method: fMRI was used in 17 patients at risk for developing psychosis (ARMS, ''at risk mental state''), 10 patients with a first episode of psychosis (FEP) and 15 age-matched healthy comparison subjects to examine neural responses to increasing difficulty of mnemonic engagement in an object–location paired associate memory task. Groups were matched in terms of age, IQ, gender, and psychopathology ratings. Accuracy and reaction time were recorded during the scan.

Results: As the mnemonic load increased, response latency increased and response accuracy decreased in an approximately linear fashion. No main effect for group was observed. However, a trend towards decreased accuracy in FEP subjects, as compared with controls, was evident. As the task difficulty increased, increased brain activity was observed in the medial frontal cortex and in the medial posterior parietal cortex. Between-groups differences in activation were observed in a cluster spanning the MFG, SFG and SMA and in the right precuneus. However, these neurofunctional abnormalities were more evident in the most demanding level of the task than in the easy level, with the ARMS groups showing less activation than controls and higher activation than FEP.

Conclusion: Abnormal neural activity in medial frontal cortex and posterior parietal cortex during paired associate learning task may represent a neurofunctional substrates of vulnerability to psychosis.

P308

Age-related decline in 5-HT2A and 5-HTU sites in the rhesus monkey hypothalamus

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Serotonin 2A receptors (5-HT2A), and serotonin reuptake transporters (5-HTU) are involved in regulating some autonomic and cognitive processes. While the pre-synaptic and post-synaptic distribution of 5-HT2A receptors is unknown in the primate hypothalamus, in cortex, the majority of 5-HT2A receptors are located postsynaptically on pyramidal and glial cells. The density of 5-HT2A and 5-HTU sites declines with age in the primate and rodent hippocampus and frontal lobe but such changes have not been documented in the hypothalamus. To assess age-related changes in the density of 5-HT2A and 5-HTU binding sites in the rhesus monkey (Macaca mulatta) hypothalamus, autoradiographic ligand binding was utilized within the anterior, tuberal, and posterior hypothalamus, and the mammillary body (MMB) of 11-17 monkeys (4.4-31.8 yo). 5-HTU binding was assayed with tritiated citalopram and 5-HT2A with iodinated dimethoxyaminopropane (DOI). The density of 5-HTU binding was significantly reduced with age in the anterior (R= -0.57, N= 16, P=0.021), tuberal (R= -0.627, N= 17, P= 0.007), and posterior (R= -0.053, N= 15, P= 0.042) hypothalamus. Conversely, only the MMB displayed a significantly lower 5-HT2A density in aged animals (R=- 0.631, N= 11, P= 0.037). These results show a significant age-related decline in CIT binding throughout the hypothalamus, suggesting an age-related reduction in its serotonergic innervation. While we were unable to evaluate 5-HT U binding in the MMB, our results show a significant decline in DOI binding in this nucleus. Future studies are needed to determine the 5-HT2A receptor distribution in the monkey hypothalamus. (Supported by NIH Grant-P01-AG00001-29 and RR-00165).

P309

The WHO (Ten) well-being index as a screening instrument for major depression in a population-based sample

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Background: The present study evaluated the association between the WHO (Ten) Well-being index and major depression assessed by the Major Depression Inventory (MDI) and Schedules for Clinical Assessment in Neuropsychiatry (SCAN). The main aim was to examine how well the WHO (Ten) Well-being index worked as a screening instrument for depression in a population-based sample.

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