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Effect of co-application of Alpha1-Adrenergic antagonist and D2 antagonist on locomotion and behavior of rats in a place avoidance task

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Study of a neurotransmitter substrate of spatial navigation is one of the most investigated topics in cognitive neurosciences. Active allothetic place avoidance (AAPA) task is a spatial behavioral paradigm allowing simultaneous assessment of changes in spatial behavior and locomotion of experimental animals. In the present study, we investigated the involvement of alpha1-adrenergic and dopamine D2 receptors in the locomotor activity and the spatial efficiency in the AAPA task. We administered specific receptor antagonists prazosin (1 and 2 mg/kg) and sulpiride (10 and 30 mg/kg) either separately, or co-applied them together. Results show that co-application of both drugs affects locomotion and behavior of rats at the doses, which cause minor or no impairments when injected independently. Such a potentiation of effect suggests that both types of receptors act synergistically to regulate the locomotion in the AAPA task. However future experiments are required to elucidate whether the behavioral deficit occurs as a result of decreased locomotion, or evolves as a stand - alone phenomenon. The presented experiments also support the usefulness of the AAPA task in the study of animal cognition.

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Computerized training of working memory in adults with attention deficit/hyperactivity disorder and drug addiction

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Background and Aims: Attention Deficit/Hyperactivity Disorder (ADHD) is clearly over represented among patients with drug addiction. Deficits in working memory (WM) are thought to be of central importance for ADHD. Previous studies indicate that WM can be improved by training.

In this pilot study we have examined if training of WM in adult patients with ADHD and a history of severe drug abuse would be possible to apply in a clinical setting. In addition, we hypothesized that the training would improve WM in this group.

Patients and Methods: Subjects: Nine patients with ADHD and a history of drug abuse were recruited. The age range was 21-52. One patient was addicted to alcohol, one to cannabis and seven patients to amphetamine. All patients had been drug-free more than two months prior to inclusion. Outcome measures: WM was assessed using four different tasks. The Self Rating Scale (CFQ) was used to score symptoms of cognitive failures in daily life. Training procedure: The treatment consisted of performing WM tasks implemented in a computer program (RoboMemo[®]).

Results: Eight patients completed the treatment and remained drug-free during the training. There was a clear improvement in two WM test. Seven patients reported a subjective improvement as rated in CFQ.

Conclusion: This pilot study shows that computerized training of working memory can be performed in a clinical setting of adults with ADHD and drug addiction. The improvement support that patients with drug-addiction may have the same plasticity in the brain that non-addictive patients show.

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Validation and normalisation data for the Stroop, TMT and N-back tests in the Polish population

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Neuropsychological assessment of prefrontal cortex activity included several tests: The Stroop Color Word Interference Test is a method for the assessment of verbal abilities, attention, verbal working memory and executive functions, whereas Trail Making Test measures psychomotor speed, the ability to shift strategy, executive functions and visuospatial working memory. The N-back Test measures visual working memory and visuomotor abilities. Normalization of these tests for Polish population has not been done so far. The goal of the study was exploratory analysis of possible associations between performance of the Stroop Color-Word Interference Test, Trail Making Test and N-back Test in healthy subjects and basic demographic features. The study included 200 healthy volunteers (100 male, 100 female), aged 18-60 (mean 32±10,6) years.

Results: Highly significant associations between age and performance on all tests was found. Additionally there was negative correlation between years of education and time of performance on the Stroop Test part A and also positive correlation between years of education and number of correct responses on the N-back Test.

Conclusion: Obtained result are consistent with the findings of other normative studies for these neuropsychological tests: Bullock et al., 1996, Ivnik et al 1996, Hays 1995, and Smith 1996.

Poster Session II: Psychogeriatrics

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Tendencies in diagnosing and treatment of depression and anxiety disorders in elderly persons in Lithuania

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Depression and anxiety disorders are highly prevalent though underdiagnosed and under-treated in elderly population having negative impact on quality of life, health and length of living.

The goal of the study was to assess the tendencies in diagnosing and treatment of depression and anxiety disorders in elderly persons in Lithuania.

Methods: Study based on analysis of data derived from liaison psychiatry services provided by Psychiatry Clinic in somatic and surgery departments of Kaunas Medical University Clinic during the period June 1 – September 31 of 2007. All elderly patients (≥ 65 years) referred by their treating doctors underwent unstructured clinical examination of consultant psychiatrist and structured interview regarding previous contacts with psychiatrists and treatment with