

PLA2 inhibition activity and the severity of clinical aspects of Alzheimer's disease. Besides, in rat, the activity of PLA2 is required for memory retrieval and the inhibition of this activity in hippocampus was reported to impair memory acquisition. In mammals, this important gene family is composed of >30 genes dispersed in throughout the genome in almost every chromosome. These genes code for a large number of proteins that can be divided into five main enzymatic subgroups. After screening for PLA2 genes expressed in the brain, using *in silico* databases, we investigated if these genes were modulated by memantine. For this wistar rats received memantine by gavage for a period of 30 days. After treatment the animals were sacrificed and mRNA samples of hippocampus and frontal cortex were used for quantification of Pla2 genes using qRT-PCR. The expression of specific Pla2 genes was significantly increased in both tissues evaluated. Our data does not prove that memantine has a direct effect over PLA2, however, we could demonstrate that PLA2 expression is activated after treatment with this drug. This information may be relevant to clarify its mechanism of action on both aspects: neuroprotection and reverse deficits in learning/memory.

P0342

Neuropsychological changes in patients after normothermic versus hypothermic CABG - randomized trial

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Aim: to assess changes in cognitive functioning of Coronary Artery Bypass Grafting patients including effect of hypothermia and normothermia.

Methods: Randomly selected normothermic (N, n=30) and hypothermic (H, n=21) patients were assessed 3-10 days before and 7-10 days after CABG using Bourdon Test, RAVLT, Tower of Hanoi Test, TMT: A&B, Benton Visual Retention Test, Digit Span, Digit Symbol, Verbal Fluency Test: Supermarket, Raven and Vocabulary Scales. Cognitive impairment rating (CIR) was defined as at least 1 SD scores deterioration, or change into worse category in at least 20% of tests.

Results: Cognitive impairment was observed in 10 out of 12 tests. Changes were significantly greater in H-group in immediate recall visual memory, visual-motor coordination and working memory and in N-group in immediate verbal recall. Regarding mean changes impairment of immediate visual memory were observed in 60% of patients, whereas impairment of delayed recall auditory-verbal memory, immediate verbal memory, psychomotor speed, visual perception, language, attention -in 20-30%. The changes were similar for both methods ($p=0.465$). In N-group deterioration was observed in 26.7%, improvement in 5% of measures; in H-group deterioration—28.6%, improvement- 7%. On average deterioration of at least 1 category was observed in 3 of 11 tests. CIR was met in 64.7% of the whole sample. There was no significant differences between the methods according to this criterion (N- 60%; H- 71.4%).

Conclusions: CABG with extracorporeal circulation influences on cognitive functioning. Results suggest impairment in the field of coordinating complex cognitive processes rather than executive functions regardless of method used during CABG.

P0343

Investigation of the efficacy of Reminyl (Galantamine) for treating speech pathology in children

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Objective: to investigate clinical efficacy and safety of Reminyl for treating children with speech pathology.

Method: 160 children at the age of 3-7 years with severe speech disorders and mental retardation, who had been found incurable because of the ineffectiveness of the previous treatment, were administered Reminyl. The Reminyl treatment was conducted in courses in the age appropriate dosage (1-2mg).

The children were divided into two groups: the 1st group comprised 95 children with speech pathology without mental retardation. The 2nd group comprised 65 children with speech impediment and mental retardation. Prior and after the treatment all the children were evaluated for speech and cognitive development by computer electroencephalography, MRI, CT of the brain. The investigation of immune and cytokinetic status was also conducted.

Results: After three-four courses of treatment with an interval of 3 to 6 months 92% of the children were able to say separate words; their understanding of speech improved. Phrasal speech developed in 78% of the children. They all manifested the improvement of cognitive functions: visual perception, concentration, visual and auditory memory, and the operational component of cognition.

In 68 % of the children the results of computer electroencephalography revealed a considerable decrease of pathological disorders. When evaluating these disorders their clinical symptoms were taken into consideration. 29 % of the children manifested some positive dynamics in their condition. 3% of the children didn't manifest any significant changes.

Conclusions: The results of the study revealed high efficacy of Reminyl treatment of children with severe speech disorders.

P0344

Behavioral pharmacology of laboratory rats: 10 years of experience with place avoidance tasks

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Spatial orientation of laboratory animals is often considered as a model of human higher cognitive functions. Roughly ten years ago, a novel behavioral task, active allothetic place avoidance (AAPA), was designed in our laboratory and our efforts to intimately investigate this task date back to this time.

In this task, animals avoid an unmarked shock sector defined in a coordinate frame of experimental room while moving over a rotating arena. It was established that besides navigation with respect to a hidden place, the task requires cognitive coordination, usually explained as an ability to separate spatial stimuli from the environment into coherent representation of an arena and a room, and to select the room frame as the only relevant one for efficient navigation.

We studied the effects of specific receptor antagonists on the behavior of animals in this task and it was found that changes in spatial efficiency are often accompanied by alterations in overall locomotor activity. In this regard, the task has an advantage of simultaneous assessment of both place navigation and locomotor behavior. The analysis of locomotion was found to be important for exclusion of a more general impairment of animals after an experimental manipulation. The results suggest that at least in some cases, the changed locomotion and decreased spatial efficiency occur concurrently, but without a mutual causal relationship. The presentation will summarize the existing evidence about modulation of behavior in this spatial task.

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