

**COCAINE: NEW-OLD CHALLENGE FOR THE YOUTH**

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**Abstract:**

Cocaine dependence is a resurgent public health problem that afflicts approximately 18.2 million people in the world. Cocaine is the most prevalent drug detected on blood and urine toxicology screens in America. Cocaine is the greatest cause of numerous hospitalizations, overdosing, violence and lethal outcomes. Moreover, cocaine is one of the five major causes of mortality among youngsters. The aim of this paper was to provide the youth useful information on cocaine addiction. Therefore, the authors reviewed literature and gathered latest information on epidemiology, pharmacodynamics, effects and permanent consequences. In addition, latest findings in role of genetics were given, along with new treatments. Cocaine is a stimulant, highly addictive drug. Some epidemiological data indicate on increased comorbidity of cocaine dependence and depression, with 32% of all depressive disorders in cocaine users. Primary target-organ of cocaine is brain, specifically mesolimbic dopamine pathway - the key component of the reward and craving mechanisms. It is a circuit among ventral tegmental area (VTA) and nucleus accumbens (NcA) - area involved in motivation and learning. Cocaine increases dopamine concentration in the NcA by blocking dopamine-uptake through monoamine transporters. Cocaine causes numerous stimulating effects and leaves permanent consequences like lacunar, diffuse brain tissue reductions, changes in cerebral perfusion and metabolism, impairments in attention, learning, memory, motor abilities and spatial integration. In addition, poorer ability to copy three-dimensional objects in Copy Figure Test is noticed. The latest data show that Homer-genes (1, 2, and 3) regulate sensitivity to cocaine. Animal models showed that H1,2-deletion augments sensitivity and facilitates cocaine-effect upon NcA glutamate levels. Namely, H2-deletion underlies low basal extracellular glutamate level also noticeable in withdrawal from cocaine administration (due to reduced activity of cystine-glutamate exchanger). In other words, it provides basal craving, cocaine-seeking. Therefore, cocaine administration elicits augmented increase in extracellular glutamate and consequential feeling of reward. In conclusion, all this data help understanding individual differences in cocaine abusers, facilitate prevention and treatment. Today we have medicines such as Vanoxerine, used as a cocaine substitute - though without its rewarding effects, or specific antibodies that sequester cocaine in bloodstream, thus preventing cocaine's entry into the brain.

**Keywords:** cocaine, youth, public health, prevention

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**THE STATE OF THE VEGETATIVE NERVOUS SYSTEM IN PATIENTS WITH PROGRESSIVE MUSCULAR DYSTROPHIES**

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**Abstract:**

Progressive muscular dystrophies (PMD) are one of the most prevalent forms of hereditary neuromuscular diseases with a well studied clinical presentation and diagnostics. The questions about the vegetative nervous system state in this particular cohort of patients are poorly studied. 26 PMD patients of 12 to 32 years (23,4±0,9 years on the average): 11 patients with myopathy of Becker, 9 with myopathy of Erb-Rot, 6 with scapulohumeral myopathy of Landouzy-Dejerine. The diagnosis was made on the basis of a multimodality neurologic examination with the use of electroneuromyography and medicogenetic consultation. The vegetative tonus was determined on the basis of special tables and index of Kerdo, the vegetative reactivity was evaluated according to findings of oculocardiac reflex of Dagnini-Aschner, the vegetative provision of the activity (VPA) was estimated by means of the orthostatic test. Fifteen apparently healthy persons compared according to the age with examined patients have been examined as a control group. Analysis of results of an investigation of the vegetative status corroborated a parasympathetic orientation of the vegetative innervation in patients majority (88,5 per cent). Vegetative index of Kerdo made up-15,7±1,4 ( $p < 0,05$  compared to the control group). Vegetative reactivity was elevated in 61,5 per cent, decreased in 23,1, the normal condition was only in 15,4 in accordance with results of oculocardiac reflex research of Dagnini-Aschner. Vegetative reactivity was simultaneously registered in 26,7 per cent, diminished - in 20, normal - in 53,3 in the control group. During the orthostatic test, an excessive vegetative provision of the activity was detected in 15,4 per cent, insufficient - in 53,8, normal in 30,8. An excessive vegetative provision was - 6,7 per cent, in sufficient - 13,3, normal - in 80 in the control group. An analysis of obtained findings has revealed certain specific characteristics of functioning of the vegetative nervous system (VNS) in PMD patients in comparison with healthy persons. In particular, trophotropic effects predomination of that has been reflected in the parasympathetic orientation of the initial vegetative tonus, excessive vegetative reactivity and vegetative provision insufficient power of the activity against a background of vegetative regulation disturbances of the head great vessels tonus.

**Keywords:** PMD, myopathy, VPA, vegetative innervation

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