MECHANISMS OF DEVELOPMENT OF COCAINE AND AMPHETAMINE CURVATURE

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Introduction. Drug dependence is an insurmountable need for the constant administration of drugs in order to obtain an euphoric effect or to avoid abstinence when it is canceled. Often, psychostimulants are used for this purpose. To group of psychostimulants possessing drug-related potential, causing dependence (mainly psychic), include cocaine (according to ICD-10, the dependence on cocaine syndrome is allocated in a separate section - F14); amphetamines and amphetamine-like drugs; methamphetamine and cathinones, MDMA (methylenedioxymethamphetamine or ecstasy), which has besides the stimulating mescaline-like hallucinogenic effect; caffeine UNODS estimates that today in the world there are between 14 and 57 million people aged 15-64 who have used amphetamines at least 1 time in the previous year, of which 2/3 consist of methamphetamine users. In the United States, against the background of the constant prevalence of cocaine dependence, the appeal for treatment for amphetamine dependence has increased eightfold since 1992.

The volume of the cocaine market is estimated at about 5.7 billion euros per year (from 4.5 to 7.0 billion euros). The market for essential synthetic amphetamine, methamphetamine and methylenedioxymethamphetamine (MDMA) stimulants is estimated at about 1.8 billion euros per year (from 1.2 to 2.5 billion euros) for amphetamines (including meth) and 0.67 billion euros (from 0.61 to 0.72 billion euros) for MDMA (Ecstasy).

Aim. Analyze of the mechanisms of development of cocaine and amphetamine curvature for finding out ways of pharmacological correction of these types of dependence.

Results and discussion. In general, all psychostimulants stimulate the limbic system of the brain, which directly participates in the processes of regulation of memory, learning and emotions, and is closely related to the hypothalamus, which coordinates the interaction between many brain structures.

The mechanism of action of these agents has a similarity mainly related to the dopamine system. Dopamine is a precursor of norepinephrine and adrenaline, one of the main neurotransmitters of the central nervous system. Dopamine is a catecholamine and has adrenergic effects: increases resistance to peripheral vessels, increases arterial pressure, cardiac contractions, increases the need for heart muscle in oxygen, stimulates glycogenolysis and increases glucose levels.

In the extrapyramidal system, dopamine plays the role of a stimulating neurotransmitter that promotes motor activity, decreases the muscle hypertonus, rigidity, stiffness, provides control of motor activity, acts as a neurotransmitter inhibiting the secretion of a number of hormones, regulating endocrine functions on the hypothalamic-pituitary. The mesolimbic pathway and the participation of dopamine are responsible for the formation of the emotional staining of the activity, the development of a sense of pleasure, with this level linked emotions, thinking.

Numerous studies have shown that it is precisely the influence of cocaine, amphetamine, and other psychostimulants on neurochemical processes occurring in the brain that are the underlying cause of the development of syndrome of dependence. All substances capable of causing dependence syndrome have a common aspect of the pharmacological action-this is a specific effect of the effect on catecholamine neurotransmitter in limbic brain structures.

Cocaine blocks the reuptake of monoamine neurotransmitters, including dopamine (DA), norepinephrine (NE), and serotonin [5-hydroxytryptamine (5-HT).

Amphetamine contributes to a significant increase in the number of extracellular monoamines available in the brain by blocking and / or turning DA, NE and 5-HT reverse graft conveyors and regulating their surface expression levels.

The action of these drugs leads to an increased release from the cell depot in these sections of the dopamine brain, as a consequence of a more intense excitation of the reinforcement system. Excitement is accompanied by positive emotional experiences. Free catecholamines undergo metabolism enzymes and break down rapidly. A part of the free mediator is returned to the depot with the help of the retractor

mechanism. Repeatments of cocaine and amphetamine lead to the depletion of dopamine stocks, which is accompanied by insufficient excitement of the reinforcement system with the arrival of a "normal" impulse. This manifests itself as a fall in structure, a feeling of sluggishness, weakness, malaise, boredom experience, emotional discomfort, and a depressive condition.

In the treatment of these types of dependence, antidopaminergic agents, disulfiram and antidepressants are used to influence mood swings in people in the early withdrawal syndrome.

Conclusions. As a result, an understanding of the mechanisms of dependence on these funds will allow the development of drugs for the treatment of these types of dependence.

VITAMIN D DEFICIENCY AND METABOLIC SYNDROME

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Introduction. Classical ideas about vitamin D are associated with its important role in calcium-phosphorus homeostasis and the influence on bone mineral density. However, this does not limit the biological effects of vitamin D. It also affects other physiological processes in the body, including modulation of cell growth, neuromuscular conduction, immunity and inflammation. Recently, significant material has been accumulated on the relationship between vitamin D deficiency and obesity, insulin resistance, adverse effects on insulin secretion, and glucose tolerance.

Aim. Carry out an analytical review of the role of vitamin D in the development of metabolic syndrome.

Materials and methods. Data analysis of literature and Internet sources.

Results and discussion. It has been established that insufficiency of vitamin D leads to insulin resistance and increases the secretion of insulin, and, ultimately, leads to the emergence of a metabolic syndrome. There is a hypothesis about the "ionic" theory of the development of arterial hypertension, type 2 diabetes, obesity and other manifestations of the metabolic syndrome, which manifests itself in increasing intracellular calcium concentration, decreasing intracellular magnesium and pH. Low serum calcium levels due to limited consumption of food and vitamin D deficiency lead to a secondary increase in parathyroid hormone, which in turn causes an increase in intracellular calcium concentration leading to increased preadipocyte differentiation into adipocytes and the development of obesity. There is evidence that increased intracellular calcium enhances the effect of 11β-hydroxysteroiddehydrogenase type 1 on adipocytes, which, like angiotensin II, leads to increased cortisol production in these cells, causing the progression of both hypertension and obesity. There is a so-called "vicious circle" - on the one hand, obese people have a lowered level of vitamin D, on the other hand, vitamin D deficiency is a risk factor for obesity, type 2 diabetes and other components of metabolic syndrome.

Conclusions. Thus, vitamin D deficiency has a negative impact on human health and is independent risk factor for the development of metabolic syndrome components. To increase the effectiveness of primary and secondary prevention of cardiovascular diseases and metabolic syndrome, it is necessary to maintain vitamin D at the optimal level.

INFLUENCE OF VAGINAL ADMINISTRATION OF THE NEW GELS TO BEHAVIORAL AND EMOTIONAL REACTIONS IN FEMALE RATS WITH ESTROGEN DEFICIENCY

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Introduction. Neuroendocrine alteration in the women organism during menopause is often accompanied by the development of a climacteric syndrome with concomitant mental disorders (fear, anxiety, depression, etc.) that occupy a significant place in the symptomatology of menopausal disorders.