

MECHANISMS OF BROMOCRIPTINE D2-DOPAMINE RECEPTORS SELECTIVE AGONIST INFLUENCE ON OBESITY CORRECTION

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Introduction. Obesity is a pathological condition characterized by a significant increase the amount of adipose tissue which leads to the metabolic diseases development, in particular diabetes mellitus type 2 (DM 2). Today the search for new correction methods of metabolic disorders against carbohydrate and lipid metabolism disorders under obesity conditions is quite promising. Bromocriptine is a selective agonist of D2-dopamine receptors, which recently shown a high efficiency in the treatment of type 2 diabetes.

Aim. The aim of our work wst to study the theoretical impact of D2-dopamine receptors selective agonist bromocriptine on the obesity correction mechanisms.

Result and discussion. It is known that weight excess leads to an imbalance in the work of many hormones, including increased prolactin level. Prolactin - anabolic peptide hormone secreted by the adenohypophysis, it mainly ensures the women reproductive system functioning. However in obesity conditions there is a hyperprolactinemia developmen, which is one of the main humoral factors of energy accumulation (fat accumulation). The regulation of prolactin production is controlled by the hypothalamic dopaminergic neurons (D2-dopamine receptors), selective stimulation of which leads to the hyperprolactinemia elimination and promotes the process of weight correction. It's important to mention that the dopamine receptors have several isoforms and they are divided based on their localization in the central nervous system, and on the effects they cause. For example, amphetamines lead to a massive release of dopamine and norepinephrine, which on the contrary leads to increased prolactin levels in the blood. That is why only selective agonists of D2 receptors can reduce the prolactin production. According to several experiments, administration of bromocriptine in low doses at the beginning of the day was accompanied by carbohydrate and lipid metabolism normalization, which took place under obesity conditions, lowered glucose in serum, increased lipolysis process, lipogenesis inhibition etc.

Conclusions. Thus, it can be assumed that the bromocriptine effectiveness in the obesity and type 2 diabetes treatment occurs through the mechanism of hyperprolactinemia correction. Perhaps the studied drug has other ways to influence the course of obesity and type 2 diabetes development that requires further research.