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UZALEŻNIENIE OD AMFETAMINY: CHARAKTERYSTYKA NEUROBIOLOGICZNO-KLINICZNA

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AMPHETAMINE DEPENDENCE: NEUROBIOLOGICAL AND CLINICAL CHARACTERISTICS

ABSTRACT – Amphetamine and metamphetamine are synthetic drugs that belong to a group of compounds known as psychomotor stimulants. In humans, amphetamine causes increased arousal, reduced fatigue, and feelings of exhilaration. Sleep is delayed, and performance of simple, repetitive tasks is improved. Amphetamine has severe abuse potential in humans. Some individuals develop a binge pattern of use, during which the drug dose may be increased many fold due to the development of tolerance. This pattern may also lead to the development of a psychotic state that closely resembles paranoid schizophrenia. The reinforcing and psychomotor stimulant effects of amphetamine have been attributed to activation of dopaminergic transmission, particularly in the nucleus accumbens. A substantial body of literature has established amphetamine-like stimulants as potent, indirect agonists at dopaminergic synapses, and this agonist activity arises from the combined ability of these drugs to release dopamine not only from presynaptic nerve terminals but also at the level of the cell body; to block dopamine uptake and, at high doses, to inhibit dopamine degradation by monoamine oxidase. Physiologically, amphetamine acts as a typical sympathomimetic agent, causing elevated blood pressure, hart rate, respiration rate, and energy metabolism. Despite these and other „side effects", amphetamine is used therapeutically in the treatment of narcolepsy and attention deficit/hyperactivity disorder. Since the reinforcement value of amphetamines is apparently related to their ability to modify dopamine function in the ventral tegmental area – nucleus accumbens pathway, various researchers have theorized that dopamine may play a central role in the integration of sensory, motivational, and motor functions.

Key words: amphetamine abuse, reinforcement, neuroadaptations, animal models, dopamine.

WSTĘP

Środki psychostymulujące (psychostymulanty) wywołujące silne pobudzenie psychomotoryczne należą do najsilniejszych narkotyków. Zaliczamy do nich kokainę oraz amfetaminę i jej pochodne. Wywołują one aktywację sensoromotoryczną manifestującą się wzmożoną pobudliwością i czujnością, gotowością do działania oraz ogólnym pobudzeniem behawioralnym.