



Nephrotoxic Effect of Ethanol in Chronic Alcoholism

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Abstract: *Carried out in the present study of pathomorphological changes in the kidneys with ethanol intoxication. It is shown that ethyl alcohol has a nephrotoxic effect on the convoluted tubules. The longer the intoxication is, the more the kidneys are damaged and the homeostatic shift is more pronounced in young animals. In an experiment on animal models, it was found that excessive long-term use of ethanol leads to dysfunction of the kidney tissue, which develops nephrothelial steatosis.*

Key words: *ethyl alcohol, morphology, kidneys, experiment.*

Introduction

Alcoholism, like no other disease, causes a complex of negative social consequences. These consequences are determined by the toxic effect of alcohol, its influence on the physiological, psychosomatic and behavioral reactions of a person, on the one hand, and the pathogenetic patterns of chronic alcohol intoxication, on the other. In practical healthcare, its solution is assigned to narcologists, whose efforts are aimed at suppressing the mental and physical dependence on alcohol. At the same time, little attention is paid to damage to internal organs. The only exceptions are alcoholic cardiomyopathy and liver damage in alcoholism, the pathogenesis and morphogenesis of which has been intensively analyzed, especially in recent years [1-2,3,]. The pathology of the kidneys has been studied to a lesser extent, although it is the diseases of the excretory system that occupy the main place in the structure of the general morbidity of people who abuse alcohol [1-7,8]. Chronic inflammatory diseases of the excretory system account for about 14% in the overall structure of morbidity; among the causes of death, they occupy the 4th place in an adult after cardiovascular, oncological diseases and injuries. [2,4,5,8,]. Many researchers believe that in the pathology of the kidneys in patients with alcoholism, the leading place belongs to chronic nonspecific diseases [9-10].. Alcohol mortality is not limited to alcohol poisoning and death from violent causes (murder, suicide), it includes a significant percentage of deaths from alcohol-related somatic pathology [4]. In addition, studies conducted in this direction, in the dynamics of the formation of chronic alcohol intoxication, allow us to determine that a single use of a moderate dose of ethanol in the development of renal failure is of no small importance, since the works are devoted to determining the amount of ethanol administered or the duration of its use as risk factors. , to reduce the anti-infective resistance of the kidneys. However, there is still no clear concept of the state of the various links of anti-infective resistance of the kidneys in alcohol intoxication. The organs of the excretory system as a whole seem to be a kind of target for chronic alcohol abuse.

Materials and methods. The study was conducted on 65 white outbred rats weighing 180-210 g. The experiment was carried out by introducing alcoholic beverages with the addition of an ethanol solution. The animals were divided into group III, in group I 20 rats reproduced by intragastric administration of water, served as control. Animals II and /kg of body weight once intragastrically injected ethanol at a dose of 5 mg /kg of body weight and group III 10 mg/kg of body weight. Animals were slaughtered 3,7,15,30 days after exposure to ethanol and were removed from the experiment at 3 months of age by instantaneous decapitation of animals under ether anesthesia. Kidney tissue extracted from the abdominal cavity was fixed in Carnoy's solution for fixing



histological preparations, which consists of absolute alcohol, chloroform and glacial acetic acid. Next, histological sections were prepared with a thickness of 5-6 μm , which were stained with hematoxylin and eosin. Morphological studies of kidney tissue were studied under a Leyka microscope. The process of experiments on laboratory animals was carried out in accordance with the Declaration of the International Medical Association, adopted in Helsinki in 1964 and completed in 1975, 1983, 1989, 1996, 2000, 2002, 2004, 2008, 2013.

Results of own research and discussion. Microscopic examination of the kidneys in the early stages revealed edema, dyscirculatory disorders, dilation of the veins and capillaries of the stroma and glomeruli, and stasis in the parenchyma. A basal thickening of the capillary loops was also noted. In an experiment on rats, it was found that ethanol ingestion has a short-term effect on the tissues of the kidneys and affects the water-salt metabolism, and the filtration and reabsorption function of the kidneys and desquamation of the epithelium of the renal tubules were also impaired. Histologically, there are foci of acute inflammation of nephrocytes, spasm of small arterioles, and on the 15th day, atrophic changes were detected in the kidney parenchyma.

On the 30th day after the introduction of ethanol, fatty degeneration from the vityh tubules of the kidneys was noted. We also revealed lymphoid cell infiltration of the stroma with the phenomena of fibrosis and sclerosis in the kidney tissue, microcirculation disorders in the kidneys. In an experiment on animal models, it has been established that excessive long-term use of ethanol leads to dysfunction of the kidney tissue, which develops nephrothelial steatosis.

Conclusion

Thus, the changes we have identified allow us to draw the following conclusions: ethyl alcohol has a nephrotoxic effect, and the target is the proximal tubules of the kidneys. Steatosis of the nephrothelium of the proximal tubules is its morphological substrate.

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