

ENTEROSORBENT BASED ON CHITOSAN ACETATE

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The aim of the study is to investigate the physicochemical, structural and sorption properties of the sorbent based on chitosan acetate, and the possibility of its use for the treatment of intoxication syndrome. One of the leading pathogenetic syndromes that determine the severity of many diseases is the intoxication syndrome. Accumulation of metabolic products in biological environments of an organism causes toxic effect on the cardiovascular and central nervous systems, inhibits detoxification function of the liver, and according to certain authors contributes to the development of secondary immunodeficiency. The damage of kidneys is mostly observed due to their role in the elimination of endogenous metabolites, and in the most severe cases it leads to the development of acute renal failure. Universal approach in treatment patients with severe intoxication is using enterosorbents that have the ability to bind infectious agents and abnormal metabolic products, thus provide detoxification effect. The experiment was conducted in two phases: the first – in vitro, and the second – in vivo on white mature laboratory rats in the vivarium of Sumy State University. The comparison of the most popular drugs, namely "Smecta", "Charcoal" and "Sorbex" was conducted. At the first stage of sorption activity was determined by iodine, methylene blue, heavy metals and protein, thereby simulating low- and high-molecular toxins.

The purpose of the second stage was to establish the ability to adsorb bacteria and their toxins in the body and determine the effect on the intestinal mucosa.

To perform the analysis the following methods were applied: colorimetric, spectrophotometric, bacteriological and electron microscopic.

In conclusion, it is necessary to note that according to the obtained results, macromolecular chitosan-based drug may be used as enterosorbent when treating intoxication syndromes and has several advantages over existing commercial drugs.