



**MORPHOLOGICAL CHANGES IN THE WALL OF THE SMALL
INTESTINE IN EXPERIMENTAL 3-MONTH-OLD WHITE BREED RATS
WITH BURNS OF THE DIGESTIVE TRACT CAUSED BY ACETIC ACID**

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ANNOTATION

Acetic acid has a local cauterizing effect by the type of coagulation necrosis and a pronounced resorptive hemato -, nephro - and hepatotoxic effect due to hemolysis of erythrocytes, the development of toxic coagulopathy, syndrome of disseminated intravascular coagulation. Tissue damage is caused by a violation of cell membranes as a result of the dissolution of lipids, which make up their main structural unit. The formation of acidic radicals stimulates the peroxidation of membranes and exacerbates the process of cell destruction. The cauterizing effect is most pronounced in the respiratory tract and in the gastrointestinal tract.

Keywords: Acetic acid, chemical burn, gastrointestinal tract, necrosis, resorption, moxibustion

Introduction

Attempted suicide as a reason for taking hot liquids is predominant in women. Most often they are observed in young females and are seasonal (spring and autumn). In some patients, knowledge of the nature of possible death and the liquid causes fear. The first sip of poison causes a spasm of the esophagus and spits out the hot liquid from the mouth. In these cases, the burn borders on a bright, demonstrative picture of damage to the lips, mucous membranes of the oral cavity, initial sections of the pharynx and esophagus. Patients who have seriously decided to commit suicide take a large amount, more than 50-100 ml of hot liquid in one sip, and they develop deep burns not only of the oral cavity, throat and esophagus, but also of the stomach,



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duodenum and empty intestine. Such patients die within the first two to three days from severe general intoxication and extensive tissue necrosis [1,2].

The degree of general toxicity depends on the duration and speed of absorption. The duration of absorption of organic and inorganic acids is from 30 minutes to 6 hours, alkalis - from 30 minutes to 2 hours. The speed of absorption, in turn, depends on the area of the burn (the amount of flammable substances) and the depth of the burn (the concentration of flammable substances) [3,6].

The effect of cauterization is most pronounced in the respiratory tract and gastrointestinal tract. The most affected areas of the digestive tract are the oral cavity, larynx, thoracic part of the esophagus and its lower third, cardiac part of the stomach, fundus, lesser curvature, antral sections and upper sections of the duodenum. The necrotic process can spread not only to the mucous membrane, but also to the entire thickness of the submucous and muscular layers [7].

Purpose of the study

Identification of motor changes in the wall of the small intestine in burns of the digestive tract of white outbred rats caused by varying degrees of action of acetic acid, the use of a biological correction method using black sedan oil in order to reduce the side effects of the chemical .

MATERIALS AND METHODS OF RESEARCH

For experimental purposes, 100 white mongrel rats of both sexes, kept under normal vivarium conditions for 3 months, were used. All experimental rats were kept in a vivarium in plastic cages at room temperature in accordance with the standards for keeping laboratory animals. At the beginning of the experiment, all rats were quarantined for a week, and after the elimination of somatic or infectious diseases, they were transferred to the usual vivarium regime. The study experimented with the method of "Strasbourg 15.06.2006, adopted and approved in Strasbourg on March 18, 1986" based on the model developed for chemical burns of the digestive tube of white mongrel rats. In the experiment, animals of the experimental group were anesthetized under general anesthesia using general ether, a solution of acetic acid

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(total dose 70%) was administered through an 8 cm long tube with a diameter of 1.5 ml.

Animals were divided into 4 groups (n=100):

Group I-3 month control (N=30);

Group II rats received a dose of acetic acid at the age of 3 months (70% of the total dose) (N=40);

Group III rats were administered black sedum oil via gavage for 30 days after receiving a 3-month dose (total dose 70%) of acetic acid (N=30);



Drawing 1 location thin intestines 3 - month rats. Macro-preparation. 1-stomach , 2-duodenum intestine, 3-thin intestine, 4-iliac intestine

A total of 100 were used in the experiments. rats, 32 of which died during experiments. Rats in all groups scored at the right time time for 1, 7 And 30 day in the morning, on an empty stomach, under common anesthesia. After autopsy abdominal cavities took mesentery thin intestines For conducting morphological research and then cut her resection microtubules . After that, the length and width thin intestines measured using millimeter ruler in the initial, average And final parts.

Group I control group (N=30) We observed parts of small intestine of white outbred rats in the control group at the age of 3 months, when their abdominal cavity was



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opened. In 3-month-old rats of the control group, all components of the small intestine are fully developed. The thickness of the small intestine wall is on average up to 814.74 mkm, the thickness of the mucous membrane is on average 671.87 mkm, the height of the villus is on average 342.86 mkm, the height of the villus epithelial cells is on average 28.34 mkm, the depth of the crypt is on average 228.29 mkm, the number of crypt epithelial cells is on average 97.56 mkm, the height of the crypt epithelial cells is on average 18.87 mkm, the thickness of the muscular layer is on average 139.68 mkm, the internal thickness of the muscular layer is on average 89.92 mkm, the external thickness of the muscular layer is on average 42.32 mkm.

Group II white mongrel rats aged 3 months, which were administered 70% acetic acid. The results obtained from white mongrel rats, which were given chemical burns under experimental conditions and were not subjected to biocorrection, showed that all laboratory animals, which were administered 70% acetic acid of group II (100.0%, N=40), had morphological changes in the small intestine. The average wall thickness of the small intestine is up to 710.74 mkm, the average mucosal thickness is 541.87 mkm, the average villus height is 212.86 mkm, the average villus epithelial cell height is 24.34 mkm, the average crypt depth is 128.29 mkm, the average crypt epithelial cell count is 97.56 mkm, the average crypt epithelial cell height is 19.87 mkm, the average muscular layer thickness is 149.68 mkm, the average internal muscular layer thickness is 90.92 mkm, the average external muscular layer thickness is 42.32 mkm.

Group I II In the results obtained from white outbred rats, which were experimentally induced chemical burns and subjected to biocorrection, it was found that Group IV was corrected with sedana oil for thirty days after the introduction of 70% acetic acid in all laboratory animals (100.0%, n = 30) morphological changes in the duodenum were found. In particular, profound changes in the intestinal villi and intestinal crypts were noted, a condition in which the inner layer of blood circulation is expanded, thickening of the sparse fibrous connective tissue, a condition of hyperplasia of the lymphoid nodes (Peyer's file). The average thickness of the duodenal wall is up to 821.23 mkm, the average thickness of the mucous membrane is 682.43 mkm, the average height of the villus is 344.79 mkm, the average height of the villus epithelial cells is 28.48 mkm, the average depth of the crypt is 228.38



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mkm, the average number of crypt epithelial cells is 93.62 mkm, the average height of the crypt epithelial cells is 19.99 mkm, we see that the thickness of the muscular layer increases by an average of 142.34 μm , the internal thickness of the muscle layer increases by an average of 93.64 μm , and the external thickness of the muscle layer increases by an average of 44.93 μm .

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