



Estimation of Naturally Modified Mineral Water Protection Activity Against Experimental Infection

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Background: The infectious diseases (ID) remain as one of the significant problems of infectology and epidemiology. The efficiency of antibacterial preparations decreases when the number of agents with multiple stability to antimicrobial remedy vastly increases, the part of associate infections enlarges, and aggression of opportunistic pathogenic flora rises. This reduces the role of the preparations in prevention of epidemics. Therefore, the optimization of only etiotropic therapies does not fully solve the problem. In this connection natural preparations seem extremely promising which strengthen the functional condition of immune system and, thereby, activate protective forces of macroorganism. One of such preparations is BAE Synergy Liquid (BAE SL).

Objective: An estimation of protective efficiency of naturally modified mineral water (BAE SL) was performed on animals in models of flue and anthrax infections.

Methods: The study was conducted on 170 white outbred mice-males with a weight of 18-20 grams. For modeling anthrax infection, B.anthraxis (71/12 strain) of the second Cenkovsky vaccines has been used, while A/Aichi/2/68 (H3N2) flu virus was used for modeling flu infection. The animals were monitored during 14 days after infection, and survived and fallen mice were counted daily.

Results: Two series of experiments were carried out. The first one concerned the study of the preparation in the experimental model of anthrax infection. As a result of the research it was revealed that the survival rate in the control group was 62.5 % at the end of monitoring (14 days after infection). The survival rate in the experimental group, in which animals took the preparation together with potable water, was 95 %. The probability that the difference is due to a random effect is $P < .001$. Next series of experiments were carried out on the experimental model of flu. As a result of the conducted researches it has been revealed, that in first experimental (use BAE SL before and after contamination) the percent of the survived animals has made 50 % at the end of monitoring for contaminated mice (14 days after infection); in second experimental (use BAE SL before) the value of an estimated parameter has made 35 %; and in the control group survival rate has made 20 %. Statistical processing (Chi-square) of the results obtained during the estimation of efficiency of the investigated preparation concerning an experimental flu infection, shows, that statistically significant difference with the control group by the mice survival rate parameters have been revealed only in the regime of use the preparation before and after contamination ($P = .02$).

Conclusions: It was shown that naturally modified mineral water has a significant effect as a preventive and therapeutic agent at anthrax and flue infections on experimental animals.