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Tuberculocid activity of some biotechnological disinfectants.

Purpose. To study the bactericidal properties of atypical mycobacteria and pathogens of tuberculosis of disinfection preparations of foreign and domestic production. Methods. The bactericidal properties of disinfectants were studied in relation to test cultures of mycobacterium mycobacterium fortuitum, M. bovis, M. avium. Disinfection preparations were used in the experiments: brilliant, bromozept 50, FAG, DZPT-2. Experiments were conducted in accordance with the guidelines [2]. Results Experiments were carried out on cultures of M. bovis and M. avium tuberculosis pathogens on test objects (batiste, tree, tile, metal, glass) taking into account biological load. Conclusions It has been established that DZPT-2 preparations at a concentration of 2% for DR under exposure of 5 hours and FAG at a concentration of 2% at exposure of 24 hours disinfect all test objects contaminated by M. bovis and M. avium with a probability of 99%. The results of the culture study are confirmed by conducting a biological study of the bactericidal properties of the drugs.

Key words: disinfection preparation, DZPT-2, FAAG, concentration, exposure, bactericidal action.

Formulation of the problem. Tuberculosis is an Analysis of recent research and publications. One of the most widespread and economically significant. The main reasons for the emergence of the disease of infectious diseases among the bovine steely-bovine animal in Ukraine are TSEs. The problem of tuberculosis- in 45% of cases, there is a violation of the requirements during the pro-lazium is relevant for Ukraine as it is conducting health-improving anti-tuberculosis diseases for chronic course violates virgins, 20% - feeding young animals from poultry, economic activity, reduces the profitability of that Come from milk processing enterprises, production, creates an epidemic danger of 15% - the contact of animals on grapes and water pipes from the hut leads to large economic losses of the private sector and other farms. In the complex of veterinary and sanitary and in 8% of cases it is not possible to determine the causes of organizational and economic measures, which pro-entry of the pathogen [1, 3]. Disinfection is important for the prevention and control of tuberculosis in tuberculosis farms in 25.9% bullous, cases of mycobacterium excreted from objects directed to inactivation of pathogens of the disease-former environment and 32.8% - from tasting in the environment. Rin Mostly mycobacteria are contaminated glandular canals, stool floor, fodder and manure passages, feeders, of which 15.5% of cases excrete M. bovis, 2.3% - M. tuberculosis and over 80% - atypical mycobacteria [5] It has been determined that atypical mycobacteria are circulating in herds of cattle, which are good for tuberculosis, and cause sensitization of animals to tuberculin and therefore reduce the diagnostic value of tuberculin test [4, 6, 8]. Taking into account that effective means have not been developed for specific prevention of bovine tuberculosis, the identification and elimination of the source of the infectious agent and the implementation of veterinary and sanitary measures are of crucial importance. An important role here is played by disinfection measures, which ensure the rupture of the epizootic chain by the destruction of pathogenic microorganisms in the objects of the environment [7]. Taking into account the above, the scientists of the NSC "IEKVM" developed new disinfection-no means DZPT-2 and FAG and proposed for use in practical veterinary science. The purpose of the research is to study the bactericidal properties of atypical mycobacteria and the pathogens of M. bovis tuberculosis of disinfection drugs of foreign and domestic production. Materials and methods of research. The bactericidal properties of disinfectants were studied in relation to

mycobacterium Mycobacterium fortuitum, Mycobacterium bovis, Mycobacterium avium test cultures. The bactericidal properties of mycobacterium thera were determined in disinfectants: • Brilliant - a universal means for disinfection and sterilization, the manufacturer - CJSC Prevention Center "Hygiene-Med" (Russian Federation). Composition of the drug: alkyl dimethyl-benzylammonium chloride - 0,9%; Glutaraldehyde and functional components - 0,8%; • bromozept 50 - disinfection agent, manufacturer - ABIC Biological Laboratories Teva Ltd. (Israel). Active substances - Didecildi-methylammonium bromide - 50%; Ethanol - 40%; • FAG - disinfectant, developer - NSC "Institute of Experimental and Clinical Veterinary Medicine" (Kharkiv). Existing rehovovs: glutaraldehyde, formaldehyde [9]; • DZPT-2 - a disinfectant, a developer - NSC "Institute of Experimental and Clinical Veterinary Medicine" (Kharkiv). The active ingredient is glutaraldehyde [10]. Experiments were conducted in accordance with the methodological recommendations [2].

1. The result of cultural studies of bacetracid properties of disinfectants in relation to M. fortuitum (n = 4)

Research results. Preliminary determination of bactericidal properties of de-infectious agents was carried out in relation to atypical mycobacteria of the species M. fortuitum by the sos-penicillium method (Table 1). These tables indicate that not all investigated drugs destroy the atypical mycobacterium M. fortuitum in appropriate regimens. Thus, working solutions of dasg brilliant and bromozept 50 in the concentration of 1-5% at exposure of 1 to 24 hours have only a weak bacteriostatic effect, while the growth of mycobacterium on the top of the nutrient medium is from 10 to more than 50 colonies of mycobacteria.

2. bactericidal properties of disinfectants against tuberculosis activators (n = 3)

The preparation for use at a concentration of 1% at exposure of 24 hours and at a concentration of 2% at exposure of 1-5 hours has a bacteriostatic effect on M. fortuitum, in the event of increased concentrations and exposure of the drug, a bactericidal effect was observed. For the action of the drug DZPT-2 at a concentration of 1% for DR in the exposure for 1-24 h, a bacteriometric effect was observed. Growth of mycobacterium was 10-50 colonies. At a concentration of 2% for DR on exposure for 1 year, the drug has a sub-bactericidal effect, at a concentration of 2% for DR - destroys atypical mycobacterium in 5 hours. The next step was to conduct experiments with cultures of M. bovis and M. avium tuberculosis pathogens on test objects (batiste, tree, tile, metal, glass), taking into account the biological load (Table 2). The results of the studies presented in Table. 2, testify to the presence of tuberculocidal properties in developed disinfection preparations. According to the results of the statistical processing of the obtained data, it was determined that the preparation DZPT-2 at a concentration of 2% for DR in an exposure of 5 hours and the preparation of FAG at a concentration of 2% for the exoneration of 24 hours disinfected all test objects, conserved M. bovis And M. avium with a probability of 99%. The results of the culture study were confirmed by the biological study of the bactericidal properties of the drugs.

Conclusions

Not all disinfectants that are on the market and M. avium. Disinfection preparations DZPT-2 of Ukraine, have bactericidal properties and FAG can be used during promishodo for mycobacteria. Disinfectant DZPT-2 disinfection for tuberculosis salt concentration of 2% for DR on the exposure of 5 - animals. The prospect for 24 years and the FAG at a concentration of 2% on the exposition of further research is to search for new 24 h disinfect test objects (bacon-safe and high-performance tisst, wood, tile, metal, glass), contact-disinfectants from A wide range of bacterial pathogenic agents M. tuberculosis bactericidal.

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