ADMINISTRATION OF ANTISEPTIC COMPOSITIONS AND IDENTIFICATION OF THEIR EFFECTIVENESS

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Abstract: *the article presents the results of research related to the development and assessment of the effectiveness of antiseptic disinfectant solutions. An attempt has been made to develop mixtures based on miromestin , chlorhexidine and ethanol. It has been experimentally proven that the developed composition, in which the mass fraction of chlorhexidine is higher, has shown greater efficiency.*

Keywords: *antiseptics, disinfectants, chlorhexidine, miramistin, ethanol.*

УПРАВЛЕНИЕ АНТИСЕПТИЧЕСКИМИ СОСТАВАМИ И ИДЕНТИФИКАЦИЯ ИХ ЭФФЕКТИВНОСТИ

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Аннотация: *в статье представлены результаты исследований, связанных с разработкой и оценкой эффективности антисептических дезинфицирующих растворов. Была сделана попытка разработать смеси на основе миристина, хлоргексидина и этанола. Экспериментально доказано, что разработанный состав, в котором массовая доля хлоргексидина выше, показал большую эффективность.*

Ключевые слова: *антисептики, дезинфицирующие средства, хлоргексидин, мирамистин, этанол.*

The list of substances used as antiseptics and disinfectants is updated every year with new drugs, while many of them have retained their positions for a long time. Medicinal properties of drugs such as iodine, peroxide hydrogen, potassium permanganate, ethanol, chlorhexidine proved so that vital drugs are recognized and included in the n erechen of Essential pharmaceuticals [1].

Ethyl alcohol 90, 70 and 40% is widely used independently and as part of many antiseptic agents. In high concentrations, ethanol has a bactericidal and bacteriostatic effect. The mechanism of action of ethyl alcohol is the irreversible coagulation of proteins and membranotropic action.

Ethyl alcohol 70% as an antiseptic for treating the hands of a surgeon, operating and injection field is a highly active antiseptic and, in comparison with other antiseptic agents, rarely causes side effects of an allergic nature. In appropriate concentrations, alcohols cause a rapid and significant decrease in the level of microbial contamination of the skin when applied for 15 s.

The disadvantage when using ethyl alcohol 70% is the impossibility of visualizing the treated skin, the possibility of using this tool for other purposes, as well as flammability, rapid evaporation. Spores of bacteria are resistant to the action of ethyl alcohol, which can lead to contamination of alcohol solutions with spores, including pathogenic clostridia. Isopropyl alcohol has the same spectrum of antimicrobial action as ethanol, its antimicrobial action begins to manifest itself at lower concentrations. Isopropyl and propyl alcohols are a part of many widely used antiseptic agents (septocid, inol, etc). However, propanol and isopropanol have a pronounced irritant effect on the skin and mucous membranes [2].

The high efficiency of chlorhexidine is due to its ability to bind to cells of stratified squamous epithelium and cause a longer effect both when used as a means for treating hands and when treating the skin [3]. The introduction into practice of cationic antiseptics, including chlorhexidine and quaternary ammonium compounds, may be accompanied by selection of the qacA/B plasmid gene, which contributes to an increase in resistance. It is not considered a carcinogen, there are no mutagenic and genotoxic effects, teratogenic and embryotoxic effects, chlorhexidine has a weak effect on reproductive function, and is weakly cytotoxic. Chlorhexidine is an antiseptic with bactericidal and fungicidal effects. Although it is not considered virucide, some marked activity against the lipid membranes of viruses, such as HIV, herpes 1 and 2, influenza A. Chlorhexidine can suppress the growth of spores and has bacteriostatic action bakter uu [4, 230]. The main advantages of HG are low price, the availability of solutions of different concentrations, which allows you to choose the optimal one for each specific situation . The 0.05-0.5% CG solutions presented in the assortment of pharmacies are active against various pathogens. But hCG can cause irritation of the skin and mucous membranes [4, 281].

Numerous scientific and clinical studies have shown high activity of m and p and Mistina against bacteria, fungi, viruses and protozoa, including hospital multiresistant strains and microbial association, the ability to increase local immunity, enhance regeneration processes, thus confirmed the lack of damaging effect on human tissue. It has a pronounced bactericidal effect against gram-positive and gram-negative bacteria, spore - forming and asporogenic bacteria in the form of monocultures and micropopic associations, including hospital strains with multi-resistance to antibiotics . Main preimushestv m iramistina wider spectrum of activity I much reading as a therapeutic agent, few side effects acts softer safer. Cost m iramistina substantially leaching [4, 281]. Miramistin recommended to

use but because of the high cost, not all medical institutions will be able to actively use the DATA th antiseptics .

The aim of the article was to develop an effective antiseptic with low toxicity and low cost.

The work was carried out using microbiological research methods. As antiseptic solid matter selected hlorgeksidin, miramistin, ethanol, since they have low toxicity and are available.

We have proposed the following compositions of antiseptics. We have created and analyzed various compositions of antiseptics (Table 1).

Table 1. Antiseptics of various compositions

Composition 1	Composition 2	Composition 3
Chlorhexidine (most) World amistin Ethanol	Miramistin (most) Chlorhexidine Ethanol	Ethanol (most) Chlorhexidine Miramistin
Identified as high e ffektivnost, fungicidal and bactericidal action	Composition of bladaet partial bactericidal oh efficiency and appeared partial fungicidal action	Possesses high bactericidal efficiency and partial, fungicidal action

Chlorhexidine has shown high bactericidal and fungicidal efficacy.

Miramistin revealed a partial bactericidal effect, did not show fungicidal efficacy. Ethanol has shown high bactericidal efficacy, but no fungicidal activity has been identified . Considering the advantages and disadvantages of the proposed antiseptic contact us after spending n us the first series of experiments (Fig. 1).

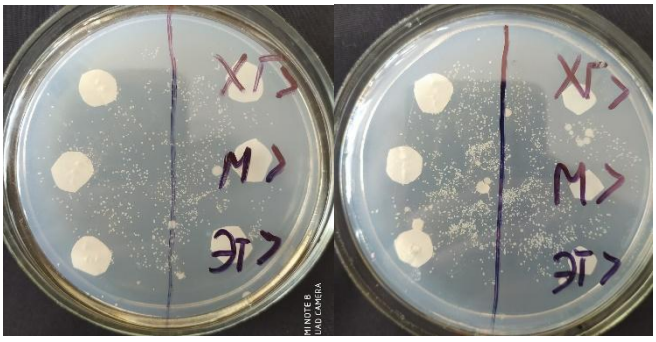

Fig. 1. Crops grown

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Ethanol has shown high bactericidal efficacy, but no fungicidal activity has been identified.

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