Table 3. – The effect of Chlorhexidine on biofilm growth with *K. pneumoniae*

Time exposures	Concentrations of Chlorhexidine			
	0.5 mg/ml	0.25 mg/ml	0.125 mg/ml	0.063 mg/ml
1/2min	4	3	1.5	0.5
1 min	4	4	1.5	0.5
3 min.	5	5	2	1
5 min.	6	5	2	1

Conclusions. As the results of the study showed that Chlorhexidine has a bacteriostatic effect on all studied microorganisms in the composition of biofilms.

In the concentration proposed by the manufacturer, the antiseptic inhibits the growth of microorganisms in the biofilm (except *Klebsiella pneumoniae*) for 6 hours with an exposure of 30 seconds. Its antimicrobial activity is more dependent on concentration than on exposure to antiseptic. In low concentrations of Chlorhexidine, the best bacteriostatic activity was at an exposure of 3 and 5 minutes.

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THE EFFECT OFAZIKAR ON MICROORGANISMS IN BIOFILMS

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Introduction. The problems of diagnosis and treatment of patients suffering from upper respiratory tract diseases have not lost their significance to the present time. These diseases account for more than half of all calls to the doctor [1, 2]. To treat diseases of the upper

respiratory tract caused by microorganisms, antibiotics are use first. Sensitivity to antibiotics in microorganisms is different. More recently, strains with resistance to them have been find more and more. In addition, difficulties in the treatment of these infections are associated with the ability of microorganisms to form microbial biofilms in the patient's body, in which they acquire increased resistance to the antibacterial drugs used. It was find that microorganisms in the biofilm could survive when antibiotics are applies at such high concentrations that cannot be achieved in the human body at standard therapeutic dosages, which often leads to ineffective treatment and the transition of the disease to a chronic form [3]. Unfortunately, to date, in real clinical conditions, the determination of the sensitivity/resistance of microorganisms to antibiotics and other chemotherapeutic drugs do not consider this fact. Azikar is often use to treat such diseases. It is a pharmaceutical drug, which is tries after all other drug options have failed to produce an adequate response in the patient

Purpose of the study. Determination of the sensitivity of microorganisms isolated in patients with lower respiratory tract diseases to Azikar

Materials and methods. The object of the study was microorganisms taken from the pathological material of patients with respiratory diseases *S. saprophyticus*, S. aureus204. Subject of research was features of the study of the sensitivity of microorganisms in biofilms to Azikar. Azikar inhibit the utilization of the bactoprenol lipid intermediates for the synthesis of bacterial cell wall. For the growth of biofilms, sterile 96-well polystyrene U-shaped plates with a volume of 323 μl were use. The sensitivity of microorganisms in biofilms was studies using Azikar in various concentrations: 500 μg/ml, 250 μg/ml, 125 μg/ml, 63 μg/ml, 32 μg/ml.The control was a well with a biofilm of microorganisms in a nutrient medium without antibiotic. Changes in the wells were record every hour using a spectrophotometer

Research results. The results of a study of the antimicrobial effect on biofilms with *S. saprophyticus* showed that Azikar at these concentrations has a bacteriostatic effect. The growth of bacteria with a concentration of 500 antibiotics is very low because of activity of Azikar against *S. saprophyticus* biofilm. When the concentration of Azikar is less than 500, it is less effective on the *S. saprophyticus* biofilm. The results are present in table 1.

Table 1. – Change in optical density of *S. saprophyticus* biofilm in a medium with different concentrations of Azikar

Time	Azikar concentrationμg/ml					
	500	250	125	63	32	control
0	0,733	1,11	1,079	1,04	0,984	1,081
1 h	0,857	1,159	1,61	1,177	1,291	1,313
2h	0,873	1,16	1,227	1,355	1,44	1,46

The changes that occur with the biofilm in the presence of an antibiotic in comparison with the control are present in the figure 1.

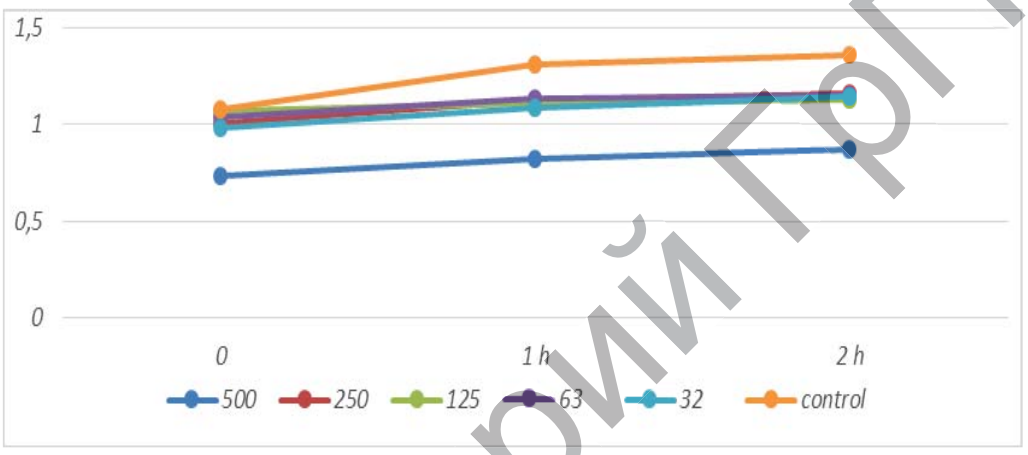

Figure 1. – Bacteriostatic activity of Azikar against S. saprophyticus biofilm growth at various concentrations

Azikar in the studied concentrations had a weak bacteriostatic effect on the biofilms of *S. aureus204*. The results are present in table 2.

Table 2. – Change in optical density of S. aureus204 biofilm in a medium with different concentrations of Azikar

Time	Azikar concentrationμg/ml					
	500	250	125	63	32	control
0	0.227	1.091	1.095	0.885	1.095	0.273
1 h	0.475	1.236	1.491	1.36	1.494	0.736
2h	0.492	1.229	1.44	1.248	1.417	0.793

The changes that occur with the biofilm of *S. aureus204* in the presence of an antibiotic in comparison with the control are present in the figure 2.

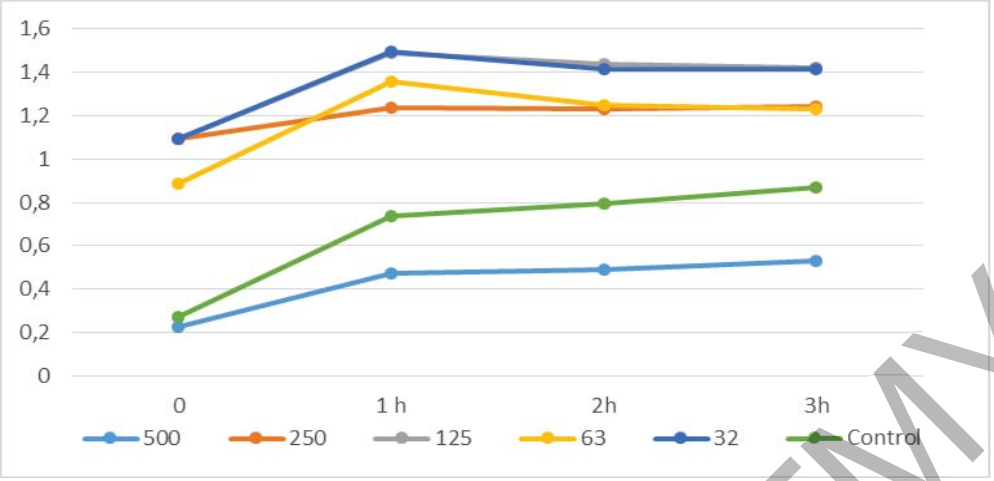

Figure 2. – Bacteriostatic activity of Azikar against S. aureus204 biofilm growth at various concentrations

Conclusions. As the results of the study showed that Azikar has a bacteriostatic effect on all studied microorganisms in the composition of biofilms. At a concentration of 500 μg / ml, Azikar inhibits the growth of *S. saprophyticus* biofilm for 1 hour. At lower concentrations, its activity was negligible. The low bacteriostatic activity of Azikar was on *S. aureus204* biofilm.

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