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Introductions. Currently, reducing mortality rates due to infections remains a priority for healthcare professionals around the world. The number of deaths associated with multidrug-resistant bacteria remains quite high, and in Ukraine it is even increasing. This can be explained by the state of war, uncontrolled migration, inadequate use of antibiotic therapy, etc.

Recent studies of diindolimethane show promising predictions for its use as a component that can lead to increasing the sensitivity of bacteria to known antibiotics.

Materials and methods. Identification of *Pseudomonas aeruginosa* isolate done using MICRO-LA-TEST.

The formation of biofilms was studied by determining the ability of bacterial strains to adhere to the surface of polystyrene plates (O'Toole G.A. method) to determine the antimicrobial activity of the test sample “dioxidine 0.10% 3,3'-diindolylmethane 1.00% butylhydroxyanisole 0.02% butylhydroxytoluene 0.10% macrogol 20 cetostearyl ether 15.00% water up to 100.00%”. The results were analyzed on a Multiskan EX 355 photometer at a wavelength of 540 nm and measured in units of optical density.

Results and discussion. The experimental composite of diindolylmethane in combination with dioxidine led to a significant destruction of the daily biofilm formed by *Pseudomonas aeruginosa* isolated after death.

The optical density of the biofilm after 24 hours was 1.593±0.402 units of optical density, and under the action of the complex it decreased to 0.380±0.036 units of optical density. Measurement of the optical density after 48 hours showed the following data: 1.630±0.413 units of optical density initially, and 0.367±0.051 units of optical density after the complex application. After 72 hours, the control biofilm was equal to 1.631±0.417 units of optical density, but the complex caused its decrease to 0.379±0.046 units of optical density.

It is evidently that the diindolylmethane increases the permeability of the biofilm and ensures the penetration of dioxidine into the target. It is quite interesting and encouraging that the inhibitory effect of the complex increases over time and within 72 hours of exposure it reduced the density by 6 times.

Conclusions. This study confirms the effectiveness of various composites with diindolylmethane as an additive that increases the sensitivity of multidrug-resistant microorganisms to antibacterial drugs. Testing of new diindolylmethane composites and their use in complexes with various antimicrobial drugs will help to find the most effective combination that can be used in practice for the treatment of infections caused by multidrug-resistant strains of *Pseudomonas aeruginosa* in the future.