THE EFFECT OF ANTISEPTICS ON *STAPHYLOCOCCUS EPIDERMIDIS* SKIN ISOLATES

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Nowadays bacterial skin infections are some of the most common infectious diseases. Treatment of skin infections usually include application of the topical antimicrobials, which may be an antibiotic (such as macrolides) or an antiseptic. However, there are some concerns that indiscriminate usage of antiseptics can potentially promote developing of antibiotic resistance. In our research we studied the effect of most common antiseptics on skin isolates of staphylococci, which have different susceptibility to MLS-group antibiotics (macrolides, lincosamides, and streptogramin B).

The aim was to determine susceptibility of MLS-resistant strains of *Staphylococcus epidermidis* to antiseptics.

In our experiment we used 6 strains of *S. epidermidis:* 3 – with MLS-resistance (MIC of erythromycin 250-4000 μg/mL), 3 – with intermediate susceptibility to macrolides (MIC of erythromycin 125 μg/mL). All microbial strains were isolated from patients with recurrent purulent skin infections. As antiseptics we took those, which are frequently used in treatment of pyoderma: decametoxinum (0.2 mg/mL), chlorhexidine bigluconate (5 mg/mL), myramistin (0.1 mg/mL), povidone-iodine (10 mg/mL), extractum chlorophyllipti spissum (2.5 mg/mL), salicylic acid (20 mg/mL). The antibacterial activity of antiseptics was determined by serial two-fold dilution assay in Muller-Hinton broth. After incubation for 24 hours at 37°C, inhibition of bacterial growth was evaluated based on the increasing in optical density (OD), which was recorded at a wavelength 495 nm using a spectrophotometer Synergy^{TM}HTX S1LFTA (BioTek Instruments, Inc., USA). Gene5 and Microsoft Office Excel 2016 software were used for statistical processing of the results.

Decametoxinum showed the best antimicrobial activity against all *S. epidermidis* strains (0.625-1.25 μg/mL). Myramistin and chlorhexidine bigluconate were active against all tested staphylococci in concentration 0.3-10 μg/mL and 15.6-31.25 μg/mL. Povidone-iodine was active in concentation 125 μg/mL against all microorganisms. Extractum chlorophyllipti spissum inhibits the growth of all examined microorganisms in concentation 62.5-250 μg/mL. Salicylic acid showed low antimicrobial activity (1000 μg/mL) against all microbial samples.

To sum up, such antiseptics like decametoxinum, myramistin, chlorhexidine bigluconate showed pronounced antimicrobial effect against investigated strains of staphylococci. Antimicrobial activity of povidone-iodine and extractum chlorophyllipti spissum are characterized by moderate action. Salicylic acid manifested low antimicrobial activity. Consequently, acquired MLS-resistance of *S. epidermidis* does not affect the level of their sensitivity to antiseptics.