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ABSTRACT BOOK

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USE OF ANTIMICROBIAL PROPERTIES OF MEDICINAL HERBS AND PROBIOTIC MATERIALS AS AN ALTERNATIVE MEANS OF ANTIBIOTIC THERAPY

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Objective / Purpose: In the last decades, problem with antibiotic resistant bacteria is growing constantly. Because of that, there is a keen demand for the development of new strategic approaches to antimicrobial therapy. Plant extracts, plant compounds, essential oils often tend to show a high level of direct antimicrobial activity. Besides, the strains being part of probiotic preparations show a high level of antagonistic activity, restore the broken microbiocoenosis, and stimulate both specific and nonspecific factors of immune protection. Because of that, the combined complementary activity of the use of phytopreparations and probiotics may be deemed a promising direction of treatment of certain infections, especially those caused by opportunistic pathogenic bacteria [1-2].

Material and Methods: To determine the antimicrobial activity of probiotics, herbal medicinal products as test culture, the following bacteria from the ATTC (American Type Culture Collection, USA) collection were used: *Escherichia coli* ATCC 25922, *Staphylococcus aureus* ATCC 25923, *Streptococcus faecalis* ATCC 29212 and yeast *Candida albicans* ATCC 885-653; clinical bacterial strains: *Streptococcus aureus*, *S. salivarius*, *Enterobacter* sp., *Neisseria* sp., *Lactobacillus* sp. and yeast *C. albicans* isolated from the oral cavities of patients with periodontitis, and *Bacillus subtilis* YKM B-5007 and *Bacillus licheniformis* YKM B-5514 isolated from probiotic Biosporin, and *Bacillus clausii* isolated from probiotic Normaflore.

Results: To study the effect of the phytopreparations upon the bacteria the following preparations were used: tincture (*Absinthii herba*), peppermint (*Mentha piperita* L.), Rotocan, Chlorophyllipt, calendula infusion, and eucalyptus infusion (*Eucalypti viminalis folia*). We have ascertained that the *Tinctura absinthii* composition was the only preparation that did not affect the bacteria forming the active base of Biosporin. At the same time, this phytopreparation did affect most of the opportunistic pathogenic microbes taking part in the test.

Conclusion / Discussion: Therefore, we consider it proper to study the possibility of combination of these preparations (a phytopreparation and a probiotic) with the purpose of integrated correction of microbiocoenosis. In the other cases all probiotic strains proved susceptible to herbal extracts (tinctures), which presupposes that phytopreparations may be applied sequentially (with time difference) with probiotics as part of the composite therapy used to treat periodontium diseases.

Keywords: antimicrobial activity, herbal medicinal remedies, probiotics.

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