EFFICIENCY OF THE HOUSEHOLD ANTISEPTICS

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Skin of human's hand is colonized by various microorganisms. Hand sanitizers are used in order to follow basic rules of hygiene and prevent transmission of pathogenic microorganisms in conditions where the sink and soap are not available. They are recommended for use in living conditions, particularly in areas with large concentration of people. Household hand sanitizers are available in small bottles, plastic bottles with dispenser, in the form of liquid solutions, gels, sprays or foams to be used in the workplace, office in public places. Usually, household hand sanitizers contain skin softening excipients and fragrances.

The aim of this study was to determine the efficiency of the household antiseptic Arnica, antiseptics Horosten and Neosteril, liquid soap and 70° alcohol. The study was conducted using the method of washings from hands' skin before and after treatment with these substances and determining the total number of microorganisms. Washings were made with sterile cotton swab dipped in 1% peptone water, poured by 5 ml into tubes. Then tampons were shaken, squeezed and transferred into tubes with 6.5% saline broth, incubated in temperature-regulated chamber at 37°C for 24 hours and inoculated on solid nutritional media.

The study results identified the following. The number of microorganisms on the skin before treatment with antiseptic or washing the glass was on average 10^5. After application of alcohol-based household antiseptic "Arnika" the number of microorganisms decreased by 2 orders from 10^6 to 10^4. Application of 70° ethanol, combined preparation Horosten, which contains decamethoxin and alcohol, and Neosteri, which is a mixture of alcohols, reduced microbial contamination of hands by 4 orders from 10^6-10^7 to 10^2-10^3. The same result was obtained after washing hands with soap and water: the number of microorganisms decreased from 10^6 to 10^2.

Conclusions. The most reliable way to remove microorganisms from the skin is hand washing with soap and water, and further processing with antiseptics. Alcohol-based antiseptic are considered to be more effective means for microbial elimination than soap. They destroy many different species of bacteria, fungi, and are characterized by a high virucidal activity. However, alcohol-based hand antiseptics may be ineffective in low amounts or concentrations, because of the rapid evaporation it doesn't comply with required duration for destruction of microbial cells. Thus, in the absence of access to water and soap, use the hand sanitizer containing at least 60% alcohol.