



EFFICIENCY OF DISINFECTION OF DENTAL INSTRUMENTS AND PRODUCTS CONTAMINATED WITH VARIOUS MICROORGANISMS

S.Yu. Kurbanova

Resercher

Tashkent State Dental Institute

Tashkent, Uzbekistan

N.X. Alimova

Resercher

Tashkent State Dental Institute

Tashkent, Uzbekistan

P.Q. Turdiyev

Resercher

Tashkent State Dental Institute

Tashkent, Uzbekistan

A.K. Janabaeva

Resercher

Tashkent State Dental Institute

Tashkent, Uzbekistan

ABOUT ARTICLE

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Abstract: "ABK-EXTRA" has a high disinfecting activity and can be recommended for the disinfection of dental instruments and products in order to prevent bacterial, fungal infections in concentrations of 1,0; 2,0; 3,0% with an exposure time of 15-30-60 minutes, depending on the causative agent of the infection and the type of instrument.

TURLI MIKROORGANIZMLAR BILAN IFLOSLANGAN STOMATOLOGIK ASBOBLAR VA MAHSULOTLARNI DEZINFEKSIYA QILISH SAMARADORLIGI**S.Yu. Qurbonova***Tadqiqotchi**Toshkent davlat stomatologiya instituti**Toshkent, O'zbekiston***N.X. Alimova***Tadqiqotchi**Toshkent davlat stomatologiya instituti**Toshkent, O'zbekiston***P.Q. Turdiyev***Tadqiqotchi**Toshkent davlat stomatologiya instituti**Toshkent, O'zbekiston***A.K. Janabaeva***Tadqiqotchi**Toshkent davlat stomatologiya instituti**Toshkent, O'zbekiston*

MAQOLA HAQIDA

Kalit so'zlar: dezinfeksiya, bakteriya, infeksiya, mikroflora, «ABK-EXTRA»**Annotatsiya:** Olib borilgan tahlillar asosida shu ma'lum bo'ldiki, «АБК-ЭКСТРА» yuqori dezinfektsiyalovchi xususiyatga ega bo'lgan vosita hisoblanib, bakterial va zamburug'li infeksiyalarni stomatologik asbob-uskunalar orqali tarqalishini oldini olish maqsadida dezinfeksiya ishlarini amalga oshirish uchun tavsiya qilish mumkin. Ushbu dezinfektsiyalovchi vositaning 1,0; 2,0; 3,0% li eritmalari, 15-30-60 daqiqa vaqt orallig'ida qo'zg'atuvchilar va ishlov berilayotgan asbob-uskunalarining turlariga qarab samarali ta'sir ko'rsatdi.

ЭФФЕКТИВНОСТЬ ДЕЗИНФЕКЦИИ СТОМАТОЛОГИЧЕСКИХ ИНСТРУМЕНТОВ И ИЗДЕЛИЙ, ЗАГРЯЗНЕННЫХ РАЗЛИЧНЫМИ МИКРООРГАНИЗМАМИ

С.Ю. Курбанова

Исследователь

Ташкентский государственный стоматологический институт

Ташкент, Узбекистан

Н.Х. Алимова

Исследователь

Ташкентский государственный стоматологический институт

Ташкент, Узбекистан

П.К. Турдиев

Исследователь

Ташкентский государственный стоматологический институт

Ташкент, Узбекистан

А.К. Джанабаева

Исследователь

Ташкентский государственный стоматологический институт

Ташкент, Узбекистан

О СТАТЬЕ

Ключевые слова: дезинфекция, бактерии, инфекция, микрофлора, «АБК-ЭКСТРА»

Аннотация: «АБК-ЭКСТРА» обладает высокой дезинфицирующей активностью и можно рекомендовать для дезинфекции стоматологических инструментов и изделий с целью профилактики бактериальных, грибковых инфекций в концентрациях 1,0; 2,0; 3,0% при времени воздействия 15-30-60 мин в зависимости от возбудителя инфекции и разновидности инструмента.

INTRODUCTION

Currently, dental care for the population is one of the most popular types of medical care. At the same time, patients suffering from acute and chronic forms of purulent-septic diseases, viral hepatitis, HIV-infected can get to see a dentist [1,2,6,7,8]. Phenothiazine (thiodiphenylamine) was synthesized in Europe at the beginning of the 20th century in the search for new aniline dyes based on methylene blue. Until the 1940s, phenothiazine was used in medicine as an anthelmintic agent for the treatment of enterobiasis and an antiseptic for the treatment of inflammatory diseases of the urinary tract. Subsequently, the introduction of more effective and less toxic drugs into medical practice led to the fact that phenothiazine remained in the arsenal of veterinary medicine (for the treatment of helminthic infestations) and disinfection services (a remedy for the destruction of mosquito larvae) [9]. And also in the study of new

psychotropic and neuroleptic drugs, atypical antipsychotic [10, 11, 12], psychotropic properties [13, 14, 15] were studied and the study of antiseptic and disinfectant action was provided.

THE MAIN RESULTS AND FINDINGS

Often, patients, unaware of the presence of one or another form of the disease, are sources of nosocomial infections among patients and staff [1,3,6].

Therefore, all dental instruments and products used when working with a patient are subjected to disinfection. The first stage of processing instruments and products is disinfection aimed at removing or destroying pathogens of infectious diseases on the surface of dental instruments, as well as in their channels and cavities [2,3,4,6,8]. At the same time, it is important that the disinfectants used do not have a fixing ability with respect to human tissue proteins, since the fixation of blood proteins on these objects can also contribute to the preservation of the infectious agent [4,5,6].

The purpose of this study is to study pre-sterilization cleaning and effective disinfection of dental instruments with disinfectant solutions produced in the Republic of Uzbekistan.

We have studied the effectiveness of disinfection of various dental instruments and products using the "ABK-EXTRA" agent.

In this work, the material for the study was the disinfectant "ABK-EXTRA", which contains as active ingredients: the substance "ABK-PREMIX" (cocobenzyltrimethylammonium chloride-4.8%, didecyltrimethylammonium chloride - 4.8%) produced in the Republic of Uzbekistan. As objects of study, we used products of a simple and also complex configuration (probe, tweezers, a mirror tray for instruments), materials used in therapeutic and orthopedic dentistry, which were impressions (casts of the jaws) made from materials based on alginate and silicone, prostheses of various lengths, made of metal, ceramics, plastics.

Bacteriological, bacterioscopic and statistical methods were used to perform the research.

Sterile dental instruments and products were contaminated by immersion in a suspension of test strains of microorganisms with a concentration of 1×10^9 CFU/ml, prepared in a 0.15M sodium chloride solution with the addition of 40% inactivated horse serum to simulate organic contamination. Microorganism contaminated dental instruments and products after drying were immersed in the test (1.0 and 2.0%) disinfectant solution, which was to completely cover the entire instrument and product. The temperature of the disinfectant in all experiments was in the range of 18-20°C.

After a specified time interval (15, 30, 60 min), one object was removed from the disinfectant solution in compliance with sterility, wiped with a moistened sterile gauze napkin. The latter was washed in an appropriate sterile neutralizer, and then in sterile tap water, after

which it was placed in a liquid nutrient medium, incubated at the appropriate temperature, and plated on nutrient media to register and identify the microflora.

To grow the studied vegetative forms of microorganisms, appropriate selective solid and liquid nutrient media were used at the optimum incubation temperature. In the control, sterile tap water was used instead of the disinfectant solution.

After treatment of products with disinfectants, the antimicrobial effect, the presence of traces of blood, and a possible change in color and configuration of products were recorded.

It has been established that the treatment of instruments contaminated with various microorganisms with a 1.0% solution of "ABK-EXTRA" at an exposure time of 15-30 minutes did not lead to their complete disinfection. The effectiveness of disinfection was in the range of 30-62.5%, depending on the configuration of the instrument and the type of microorganism.

When using a 2.0% solution of "ABK-EXTRA", the effectiveness of disinfection was higher ($p < 0.05$). So, at an exposure of 15 minutes, instruments turned out to be disinfected in 60-80% of cases, and at an exposure of 30 minutes, staphylococci were sown only in isolated cases, all other microorganisms died. When the instruments were exposed to a 2.0% solution of the drug for 60 minutes, their complete disinfection was achieved.

The study of the fixative property of the agent "ABK-EXTRA" showed that its solutions at a concentration of 1.0 and 2.0% do not have such an effect on blood stains on dental instruments. After holding the instruments in solutions of the agent of the indicated concentrations and rinsing with running tap water, there were no visible traces of blood on their surfaces, as indicated by the negative results of the azopyram test.

Dental products in the form of impressions on an alginate, silicone base, denture blanks made of metals, ceramics, plastics and other materials after treatment with a 1.0% solution of "ABK-EXTRA" for 60 minutes did not contain microorganisms, and after exposure to them 2, 0% solution of this agent did not inoculate test strains from their surface after 15 minutes of exposure ($p < 0.05$).

At the same time, the products did not change their color and configuration, and there were no traces of blood on their surface.

CONCLUSION

The analysis of the given data allows us to consider that the preparation based on QAS "ABK-EXTRA" turned out to be very encouraging and attractive for the disinfection of dental instruments and products. Treatment of a dental instrument of any complexity and configuration with a 2.0% solution of the preparation "ABK-EXTRA" after 30 minutes of exposure led to the disinfection of the object. Demonstrating a high bactericidal effect in such concentrations,

disinfectants "ABK-EXTRA" did not have a damaging effect on instruments and products and did not have fixing properties in relation to blood proteins.

Thus, we can assume that "ABK-EXTRA" have a high disinfectant activity and can be recommended for disinfection of dental instruments and products in order to prevent bacterial, fungal infections in concentrations of 1.0; 2.0; 3% with an exposure time of 15-30-60 minutes, depending on the causative agent of the infection and the type of instrument.

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