



FEATURES OF PREVENTION OF INFECTIONS ASSOCIATED WITH THE PROVISION OF DENTAL CARE

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SUMMARY

Effectiveness of disinfection of dental instruments and products contaminated with various microorganisms by use of disinfectants of the new generation "Septolete Dental" has been studied. It was found that it shows a high bactericidal effect, while not having a damaging effect on the instruments.

KEY WORDS: *inter-hospital infections, disinfecting means "Septolete Dental" microorganisms, stomatological instruments, stomatological articles.*

INTRODUCTION

In dentistry, the acuteness of the problem is due to the fact that a large number of microorganisms are present in the oral cavity, representing not only the resident microflora of the oral cavity, but also causative agents of various diseases [1,6,5,11]. When working with drills, especially in invasive operations, these pathogenic agents are sprayed with saliva, blood and sawdust of hard tooth tissues into the air in the form of an aerosol, settle on surfaces in working rooms, while patients can get to the dentist, suffering from acute and chronic forms of purulent-septic diseases, viral hepatitis, HIV-infected. Often, patients, unaware of the presence of one form or another of the disease, are sources of nosocomial infections among patients and staff [1,2,3].

In recent years, there has been a sharp increase in the number of patients with odontogenic inflammatory diseases; - osteomyelitis of the jaws began to acquire a long and recurrent course; - there is an increase in severe forms of odontogenic purulent-inflammatory diseases with the spread of the process to several anatomical areas, extensive destruction of bone tissue and the development of

complications such as sepsis, mediastinitis, septic shock, which are one of the main causes of disability and mortality from dental diseases and complications [4, 7,8,9,10].

Despite the general principles of disinfection and sterilization in medicine, outpatient dentistry has its own specific features. The formation of resistance of nosocomial pathogens to disinfectants is observed, which requires a correct approach to their selection, use and timely replacement with other agents that are more effective against this pathogen (Golubkova A.A., 2002; Fedorova L.S., 2002).

OBJECTIVE OF THE STUDY

Increasing the epidemiological safety of patients and medical personnel in the provision of dental care to the population by improving disinfection and sterilization measures in medical facilities of the dental profile.

MATERIALS AND METHODS

As objects of research, we used more than 30 general-purpose dental instruments made (from



various materials), they are a common set for a dental examination, for example: an angle probe, dental tweezers, a tray, trowels, corkscrews, spatulas, impression trays, dental mirrors, burs, canal fillers, etc.).

As objects of research, we also used products and materials used in orthopedic dentistry, which were impressions (impressions of the jaws) made of alginate and silicone-based materials, prostheses of various lengths made of metal, ceramics, and plastics. 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 0.85% sodium chloride solution with the addition of inactivated horse serum to simulate organic contamination. The microorganisms of the following species most resistant to the action of disinfectants were used as test strains: *S. aureus*, *S. pyogenis*, *E. coli*, *P. aeruginosa* as the most common representatives of nosocomial infections, as well as the most resistant to the effects of disinfectants *P. vulgaris* and *Candida albicans*.

Stomatological instruments and products contaminated with microorganisms, after drying, were immersed in the test disinfectant solution, which was supposed to completely cover the entire instrument and product. The temperature of the disinfectants in all experiments was within 18-20°C. After a predetermined time interval (5,10,30,60 min.), One object at a time was removed from the disinfectant solution in compliance with sterility, wiped with a moistened sterile gauze swab. The tampon 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 an appropriate temperature and inoculated on nutrient media for registration and identification of microflora. In the control, sterile tap water was used instead of the disinfectant solution.

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

RESEARCH RESULTS AND DISCUSSION

It was found that the manual treatment of instruments seeded with various microorganisms with a 0.5% Septodez solution with an exposure time of 30 minutes did not lead to their complete disinfection. The disinfection efficiency was in the range of 20-65%, depending on the configuration of the instrument and the type of microorganism. *S. aureus* was sown more often than others, however, with an exposure of 90 minutes, complete disinfection of instruments of a simple configuration and significant disinfection (90%) of instruments of complex configuration were achieved.

When using a 0.8% Septodez solution, the disinfection efficiency turned out to be higher. So, with an exposure of 30 minutes, instruments were disinfected in 70-75% of cases, and with an exposure of 60 and 90 minutes. all microorganisms died.

The study of the fixing properties of the Septodez agent showed that its solutions at a concentration of 0.5% do not have such an effect on blood contamination on dental instruments. After holding the instruments in solutions of the indicated concentrations and rinsing with running tap water, no visible traces of blood remained on their surfaces.

Dental products after treatment with a 0.7% solution of the Septodez agent for 50-60 minutes did not contain microorganisms, and after exposure to them with a 0.8% solution of this agent, test strains were not sown from their surface after 30 min exposure. At the same time, the products did not change their color and configuration, and there were no traces of blood on their surface.

Disinfectant "Septolit-Dental" is a colorless or light yellow liquid with a specific odor, ready to use. The results of disinfection of dental instruments using the "Septolit-Dental" agent testified to its higher bactericidal efficiency. Dental instruments with a simple configuration are already processed within 5 minutes. became sterile in 85.0% of cases, and with increasing exposure up to 10 min. - in 100.0% of cases.

When using the Septolit-Dental solution, the chemical sterilization of the dental instrument was registered after 5 minutes. exposure for instruments of simple configuration and 10 min. exposures for instruments with a complex configuration in relation to all microorganisms taken in the experiment.

Dental products after treatment with "Septolit-Dental" did not contain microorganisms after 5 minutes. exposure. 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 data presented suggests that the composite preparations "Septodez" 0.5%, 0.7%, 0.8% and "Septolit-Dental" 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 0.8% solution of the "Septodez" preparation in 30 minutes. exposure resulted in sterilization of the object. The drug "Septolit-Dental" showed the same activity after 5 minutes. exposure. Having a high bactericidal effect, Septolit-Dental "does not have a damaging effect on instruments and products and does not have fixing properties in relation to blood proteins.



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