

Ergonomic principles of organization of the dentist of laser sources

*PhD Associate Professor M.K. Dobrovolskaya
V.M. Heley
N.I. Heley*

*Department of Therapeutic Dentistry
Faculty of Dentistry State University "UzhNU."*

Abstract

Of dentists at the present stage of the progress of medical knowledge requires not only training but also a significant physiological stress systems of the doctor, especially the visual analyzer. We know that after three hours of visual efficiency dentist reduced by 10-15%, and by the end changes - up to 20% (1). This is especially noticeable when using sources of radiation in a pulsed mode. Any contrast between light work area and surrounding surfaces contributes to eye strain accommodation, causes fatigue and headaches, which eventually leads to eye disease. Want a sharp contrast between light work and the transition zone. Light source should have a color temperature of 4600-5000K and a color code transmission is below 90 (2). Actually, these parameters significantly violated when working with the lamp Foto San CMS Dental ApS. This electronic device meets Class II standard DS / EN 60601-1; 2006. Foto San lamp used for photo-activated disinfection of cavities, root canals, periodontal pockets and extra gingival. The principle of its action is based on the ability of photosensitizer Toluidine Blue O that can be fixed on the surface of bacteria and absorb the energy of laser light red. It is split into oxygen ions (O-) and radicals (Oo). They in turn lead to the destruction of microorganisms. Depending on the biological properties of microbial exposure time ranges from 10 to 30 seconds. Especially in the treatment of periodontal diseases is needed for each exposure extra gingival pockets by repeated switching on and off lights. The latter

procedure and has badly on visual analyzer doctor. Lamp emits laser light red in pulsed mode with an output of 2000 mVT/sm² and the wavelength range-635nm. Without protective devices work with the lamp leads to a significant breach of the doctor. We set ourselves the task to choose the most rational in color and design of protective eyewear for use with lamp Foto San, who would like to extend the principles of ergonomics. Material and methods. Pilot was conducted by the selection of protective materials in color and design. Investigated five glasses of red and black of varying design and character of the surface (normal and mirror). Criterion served as a sense of the doctor of his condition after working with the lamp. Glasses of red colours, used to work with photo polymer materials, has reinforced a negative effect and disturbed vision doctor, causing pain in the eyes even within 12-24 hours. Sunglasses Black with smooth surface and side protective devices do not violate the severity of doctor, creating a feeling of comfort, allowed to control the direction of the light treatment facility. Empirically been selected goggles black with a smooth surface and side protective devices. Conclusions: black, the ability to reflect beams, some construction with side devices can recommend double goggles for use with lamp Foto San so as to approximate the conditions of the dentist to ergonomically justify preserving its visual acuity and long-term productivity.

References:

1. Minchen A.A. The total hygiene. - Moscow: Medicine. - 1984.
2. ISO 8995 law International Standard for lighting.