ABSTRACT

IRRADIATION TIME OF PHOTODYNAMIC THERAPY TO THE NUMBER OF LACTOBACILLUS ACIDOPHILUS
(Experimental Laboratory Research Use an Invitro Model)

Background Lactobacillus acidophilus is the one of etiological agents for dental caries and dominant in the deep carious lesion. Lactobacillus acidophilus also has been identified in persistent root canal infection and also related to the failure of endodontic treatment. Photodynamic therapy is a therapeutic process involving the combination of a nontoxic photosensitizers and a light source. The excited photosensitizer reacts with Reactive Oxygen Species (ROS), which induce injury and death of microorganism. Purpose. The aim of this study is to prove the effect of irradiation time of photodynamic therapy to the number of Lactobacillus acidophilus. Methods. 42 Eppendorf tube was treated with 0,5 ml Lactobacillus acidophilus distributed into 7 groups. Group I as the control group received no treatment. Group II, III, IV, V, VI and VII was treated with combination of 0,5 ml toluidine blue O (TBO) as photosensitizer and 630 nm fotoactivated (Fotosan®) exposure time for 10 s, 20 s, 30 s, 40 s, 50s and 60 s. Then stored in an incubator 37°C for 48 hours. And after that, counting the number of bacterial colonies in CFU. Result. There were significant different of the number Lactobacillus acidophilus in CFU between irradiation time. Conclusion. The longer of photodynamic therapy irradiation the less number of life Lactobacillus acidophilus. At 50 s and 60 s irradiation no one Lactobacillus acidophilus was found.

Keywords: photodynamic therapy, photosensitizer, Lactobacillus acidophilus, Toluidine Blue O