ABSTRACT

THE RELATIONSHIP BETWEEN THE IRRADIATION TIME OF PHOTODYNAMIC THERAPY AND THE NUMBER OF STAPHYLOCOCCUS AUREUS

Background: *The goal of endodontic treatment is to eliminate pathogenic bacteria which are the major problems in infected root canals so that can promote periapical healing. One of the mixed bacteria in root canal is Staphylococcus aureus which has been reported to occur more frequently in severe acute dental abscess. Photodynamic therapy (PDT) is the one of several technology that can eliminate microorganisms without causing injury to human normal cells. Different research using different device and bacteria has been reported to search the effect of irradiation time to the number of bacteria.* ***Purpose:*** *to know the relationship between the irradiation time of photodynamic therapy with the number of Staphylococcus aureus.* ***Method:*** *There are seven groups,which are control group, 10, 20, 30, 40, 50, and 60 sec irradiation time. The bacteria which has been given the fotosensitizer and irradiation using Fotosan was incubation on nutrient agar for 48 hours. Then the bacteria was counted using Quebec Colony Counter and analyzed using Kruskal Wallis test and Mann Whitney U test.* ***Result:*** *The mean of group I (control group) is 119 CFU/ml, group II is 29 CFU/ml, group III is 20 CFU/ml, group IV is 13 CFU/ml, group V is 7 CFU/ml, group VI and VII are nothing.* ***Conclusion:****The longer irradiation time can decrease the number of Staphylococcus aureus and at 50 seconds irradiation can kill all Staphylococcus aureus.*

Keywords: *Photodynamic therapy, Staphylococcus aureus, Irradiation time*