Background and Aim: Photodynamic inactivation (PDI) was shown to be a promising treatment modality for microbial infections. PDI employs the combination of a nontoxic photosensitizer and visible light to generate cytotoxic species. Bacteria growing as biofilms are more resistant to PDI compared with planktonic forms. Biofilms may block the uptake of the PS and penetration of light and thereby reduce the photosensitizing process. Infected wounds are a major cause of hospital-acquired infections and these are difficult to treat due to the emergence of antibiotic-resistant bacteria. The ability of Acinetobacter spp. to form biofilm is an important concern in burn wound infections. So, in this study, we aimed to use chitosan, a polycationic biopolymer, to improve the efficiency of PDI using methylene blue (MB) on Acinetobacter spp. growing as biofilms.

Methods: Effect of MB concentration (200 μM) and light dose (47 J/cm2) on PDI of five drug-resistant Acinetobacter spp. isolates in biofilm forms was investigated. In vitro bactericidal effect of MB-PDI on Acinetobacter spp. biofilms treated with chitosan (1 mg/ml) was also studied.

Results: For this set of PDI parameters, Acinetobacter spp. isolates showed 0.1-2.3 log killing. However, MB-PDI applied on biofilms treated with chitosan was significantly able to disrupt pre-formed biofilms (viable count reduction ranging from 3.3 to 4.9 log10-unit in comparison to controls in all tested isolates).

Conclusion: Chitosan/PDI combination had significant ability to eradicate the pre-formed mature biofilms of Acinetobacter spp. These results indicate that chitosan may improve the uptake of MB, so it can potentiate the PDI efficacy against biofilm cells.

Keywords: Acinetobacter spp. , biofilm , Photodynamic inactivation (PDI) , chitosan

P654: Inhibitory effects of Camellia sciences on the periodontal-disease causing anaerobic bacterium Porphyromonas gingivalis.

Mohammad Niakan[1], Jalayernaderi Nooshin[2], Jamshidian Hadiseh[2]

1. Department of Microboilogy,Faculty of Medicine,Shahed University,Tehran,Iran.
2. Oral and Maxillofacial Pathology Department, Faculty of Dentistry,Shahed University,Tehran,Iran.

Background and Aim: This study was designed to examine the chemical composition and in vitro antimicrobial potential of methanolic extracts of Camellia sciences (Green tea).

Methods: The inhibitory effect of methanolic extract of Camellia sciences was tested against bacteria Porphyromonas gingivalis (ATCC 33227) strains by using the paper MIC and MBC methods.

Results: The methanolic extract exhibited antibacterial activity against P. gingivalis with minimum inhibitory concentration (MIC) 20 ?g/ml, minimum bactericidal concentration (MBC) of 40 ?g/ml, and appreciable