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Title: Comparison antibacterial effect of Silver Nanoparticle on sensitive and resistant strains of Pseudomonas aeruginosa

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Abstract: Background: In recent years, many of bacterial pathogens increased drug-resistance. Treatment of infections caused by drug-resistant bacteria is very difficult. Because reduced the number of beneficial antibiotics for treatment. We need to safe and more effective drugs for the treatment of these infections. Recently, Problems due to antibiotic resistance has renewed trends to the silver for a wide range of antimicrobial agents. Nanosilver particles have high surface/volume ratio and high fraction of surface atoms, which provides more contact with microorganisms.

Objectives: In this study, we pay to comparison the antibacterial effect of Nanosilver on sensitive with resistant strains of Pseudomonas aeruginosa.

Methods: After isolation and identification of P. aeruginosa strains using biochemical tests and determination of antibiotic resistance using of Disk Diffusion Method. Finally, MIC of 27 sensitive strains and 27 resistant strain of P. aeruginosa to Nanosilver solution determine using Micro Dilution method and MBC determined with culture on the Mueller Hinton agar.

Result: 70% of sensitive strains and 70% of resistant strain (19 of 27) of P. aeruginosa showed MIC = 31.25ng/ml than Nanosilver solution.

Discussion and Conclusions: The results showed nanosilver solution is effective in killing drug-resistant bacteria. Moreover, our results indicated sensitive and resistant strains of P. aeruginosa have similar susceptibility. These results were supported by Bhat GK et al. that their result showed both drug resistant and susceptible bacteria have similar susceptibility to ASAP that it's noteworthy. If in-vivo studies in animals and patients about the safety and efficacy of nanosilver confirmed to in this concentration is non-cytotoxicity to human cells can be using of Nanosilver solution for treatment of drug-resistant infections.

Keywords: Nanosilver, drug-resistance, Pseudomonas aeruginosa.

Presentation: Poster