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Anti-microbial effect of Garlic (allium sativum Linn)

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Abstract

Introduction: Streptomycin is a first aminoglycoside synthesized as products of Streptomyces griseus and is inhibitor of protein synthesis. The resistant mutants obtained in vitro have abnormal ribosomes. In few clinical strains of staphylococcus aureus there is some evidence for plasmid locus or gene determining streptomycin resistance (ayliffe, 1970; grub band and oreilly,1971). The mechanism of resistance is uncertain. Since ancient time, naturally occurring plants have played an important role in the discovery of new therapeutic agents. Almost all antibiotics are subjected to the problem of bacterial resistance. Garlic (allium sativum Linn) has an important dietary and medicinal rule for centuries. Its typically pungent odor and bacterial activity depend on allicin, allicin, one of the active principles of freshly crushed garlic homogenates, has variety of antimicrobial activity.

Methods: Garlic powder was purchased from local market. The 70% of ethanol was prepared. Bacterial strain was inoculated on sterile nutrient broth and incubated at 37c for 24 h. Each culture was swabbed on the surface of sterile nutrient agar plate in duplicate. Standard streptomycin with different concentration was added.

Result: Mean zone of inhibition was expressed and compared with the control. The findings of this study reveal the distinct antibacterial profile of Allium sativum Linn. Solely and in streptomycin synergism against streptomycin-resistant S. aureus. Staphylococcus is a gram positive aerobic and nonaerobic, immobile. It is a catalase positive, and capable of mannitol fermentation. S. aureus is very sensitive to alcoholic extract. The antimicrobial activity of garlic is depending on allicin compound, which is more effective on gram positive bacteria much more than gram negative. Allicin is very important compound that create the antibacterial properties and limit the speed of RNA synthesis. Use of garlic extract solely is fruitful. Synergistic use can prevent the pathogenic organism grow their resistance against antibiotic.

Biography:

Njla Yehya Elhaj Wardgo is a Pharmacist at Alsawahly pharmacy group. She received her B.S from Omdurman islamic university 2011, she started her career in fedail hospital pharmacy from 2011-2013. After that she worked for Alsawahly pharmacy group till now. Njla is a medical researcher at the research center in Sudan; she currently lives in Khartoum with her husband and her sons.

Speaker Publications:

1. Anti-microbial Supported on Carbon Derived from Solid Olive Waste for Epoxidation of Cyclooctene"; Asian J. vaccine. / 2018 / 32(9) /pp 1731-2635
2. "Anti-microbial studies of safranin and methylene blue on a novel adsorbent based on phosphorylated sawdust"; Desalination and Water Treatment/ Vol 121 (2019) 199–211
3. "Anti-microbial of spongy Nano-ZnO productive of hydroxyl radicals"; Journal of Environmental Management/ Vol 281, 2020, 1138961.

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