**Comparative assessment of garlic extract versus amikacin against**

**some common pathogens: A prospective experimental study**

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**ABSTRACT**

**Objective:** To compare antibacterial effect of garlic, (a natural product) against four pathogens (Escherichia. coli, Klebseilla. pneumoniae, Staphylococcus. aureus and Pseudomonas.aeruginosa) in comparison with a standard antibiotic Amikacin.

**Study Design:** Prospective experimental study.

**Place and Duration:** Pharmaceutical Microbiology Lab, Department of Pharmaceutics, Faculty of Pharmacy, Hamdard University, Karachi from 02nd January 2018 to 25th June 2018.

**Methodology:** A number of 150 selected micro-organisms that are Escherichia. coli, Klebseilla. pneumoniae, Staphylococcus. aureus and Pseudomonas. aeruginosa, are collected from clinical laboratories of Karachi. Minimum sample size of study is 143 isolates. Disks of Amikacin (30 µg) were used for this purpose and garlic was taken as 100% crude extract. Disk diffusion method and well diffusion method were employed for Amikacin and garlic respectively. Student t-test was applied to detect the significance.

**Results:** Crude garlic extract is more effective than Amikacin against three out of four pathogens used in this study; E.coli, S. aureus and P.aeruginosa (p=0.0001), while in case of K. pneumoniae Amikacin has similar efficacy in contrast to crude garlic extract. Overall efficacy of crude garlic extract was better against standard antibiotic Amikacin (p=0.0001).

**Conclusion:** Garlic has a potent effect against a variety of micro-organisms especially those who have developed resistance to the standard antibiotics. It is also found to be effective against organisms that have developed multidrug resistance.

## Keywords: Amikacin, Antibacterial, Disc diffusion, Garlic, Pathogen, Resistance

**How to Cite This:**

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