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IN VITRO EVALUATION OF THE ANTIOXIDANT AND ANTIMICROBIAL ACTIVITIES OF GARLIC JUICE (*ALLIUM SATIVUM*) AGAINST URINARY TRACT INFECTIONS CAUSING BACTERIA

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ABSTRACT

Urinary tract infection (UTIs) are among the most common infections in human. The increased incidence of UTIs in recent decades has been accompanied by the growing emergence of antibiotic resistance. The main objective of this study is the evaluation of the antioxidant and antibacterial activities of garlic juice (GJ). The investigation of antibacterial propriety was been done against the bacterial implicated in UTIs by the disc technique method. The ferr reduction power (FRAP) has been used in the evaluation of the antioxidant activity. Our results have showed a greater antibacterial effect of GJ against all the tested strains Gram- positive and Gram-negative bacteria. *Escherichia coli* and *staphylococcus aureus* are the most sensitive species with a diameter (27.9 ± 1.8 mm and 18.33 ± 1.5 mm) respectively. However, *Pseudomonas aeruginosa* was the most resistant species with a diameter (1.25 ± 2.5 mm). The results of antioxidant effect showed that the GJ has a powerful activity compared to standard antioxidant; ascorbic acid and Gallic acid. The yield of the GJ were $23.44\% \pm 2.69$. The amount of total phenol content present was $115,545 \pm 0.0881$ (mg G A E /100ml), while that of flavonoid content was 42.055 ± 0.332 (mg QE/100ml). This investigation shown that garlic juice has a potential source of biological activity, especially the antibacterial and antioxidant effect to use as an alternative to treat the UTIs.

Key words: UTIs, Garlic juice, Antibacterial, antioxidant activity.