Antibacterial Activity of Lawsonia inermis (Henna) Extract against Escherichia coli Isolated from Urinary Tract Infections and Comparison with Selective Antibiotics In- vitro

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Introduction: Escherichia coli is an important pathogen in the urinary tract infection (UTI). Increasing of antibiotic usage for E.coli infections, created antibiotic resistance. Medical herbs with anti-microbial activity have always been important role in traditional medicine. The purpose of this study was to determine the antibacterial activity of methanolic extract of Lawsonia inermis (Henna) plant leaves against E.coli isolated from UTI in vitro.

Materials and Methods: First, a sample of methanolic extract of the Henna plant leaves (from Shah -dad region of Kerman, Iran) was prepared by maceration method and then its antibacterial activity against E.coli isolated from 115 samples of UTI was evaluated by well diffusion and agar dilution methods for determining of MIC. Also, we studied the activity of selective antibiotics (amikacin, cefazidime, ceftizoxime and co-trimoxazole) on them by disk diffusion method.

Results: The frequency distribution tables, diagrams, and anova test (by SPSS program) were used to describe and analyze the data. The results from the antibacterial tests demonstrated that the MIC50 and MIC90 of the Lawsonia inermis methanolic extract against E.coli were 0.5 and 1 mg/ml. A significant statistical relationship was observed between sensitivity of bacteria isolated to the extract and four antibiotics: Amikacin, Cefazidime, Ceftizoxime and Co-trimoxazole. (F<0.05).

Conclusion: This study demonstrated that methanolic extract of Lawsonia inermis have excellent antibacterial activity against E.coli isolated from Urinary Tract Infection and its effect is better than four selective antibiotics. However, we need more investigation In-vitro and In-vivo.