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Antibacterial activity of *Lawsonia inermis* (Sudanese Henna) leaves extracts against *Staphylococcus aureus, Escherichia coli* and *Pseudomonas aeruginosa* among recurrent urinary tract infection patients

Hanaa A M Elgailany and **Yousif F Hamed-Elnil**
Sudan University of Science and Technology, Sudan

This was a descriptive and cross sectional study conducted from May to August 2015 to determine the antibacterial activity of *Lawsonia inermis* (Henna) leaves extract against *Staphylococcus aureus, Escherichia coli* and *Pseudomonas aeruginosa* among recurrent urinary tract infection patients. A total of 100 urine samples were collected and inoculated on to Cystine Lactose Electrolyte Deficiency (CLED) media and identified by conventional method. 32 (32%) out of 100 investigated samples showed bacterial growth. Out of 32 isolated bacteria, 4 were *Staphylococcus aureus* (12.5%), 16 *Escherichia coli* (50%) and 3 *Pseudomonas aeruginosa* (9.4%). The reminder 9 (28%) were other bacteria. The antibiotic susceptibility testing was performed using standard disk diffusion method. The results showed that all *S. aureus* isolates were resistant to penicillin, 2 (50%) were susceptible to oxacillin while 2 (50%) were oxacillin resistance. Susceptible *E. coli* were 12 (75%), (88%) showed resistance to Nalidixic acid followed by Ceftriaxone (81%), Ciprofloxacin (75%) and Gentamicin (69%). *P. aeruginosa* susceptibility results showed high resistance to Nalidixic acid (100%) followed by Gentamicin (67%), Ceftriaxone (33%) and was susceptible to Ciprofloxacin. The antibacterial activity of *Lawsonia inermis* water and methanol leaves extract against selected organisms and standards was performed at different concentrations using the agar dilution method. Methanol extract of *Lawsonia inermis* showed antibacterial activity against *S. aureus*, *S. aureus* ATCC29213, *E. coli*, *E. coli* ATCC25922, *P. aeruginosa* and *P. aeruginosa* ATCC27853 also water extract showed antibacterial activity against all strains except *E. coli* and *E. coli* ATCC25922. The MIC of Henna methanol and water extracts obtained by agar diffusion method for *S. aureus* isolates were 12.5 mg/ml and 25 mg/ml, *P. aeruginosa* isolates were 6.25 mg/ml and 12.5 mg/ml respectively, *E. coli* isolates was 25 mg/ml in methanol but resistance to water extract. Gas chromatography analysis revealed that *L. inermis* has 51 chemical compounds, 30 of them have antibacterial activity.

Biography

Hanaa A M Elgailany was graduated from College of Medical Laboratory Science (Microbiology) and has been awarded MSc degree in the same discipline. She is very enthusiastic, very competent and popular among her colleagues. She works as a Cooperator with Sudanese Red Crescent and other medical camps.

hanaa.mohammed00@hotmail.com

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