Antibacteria activities of natural extracts againtst resistance pathogenic escherichia coli in urinary infections

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Injuries of urinary tract infections in humans are considered the most serious health problems facing the world .Generally humans in many countries especially developing countries expose to bacterial infection in different ages and sex. Females is more susceptible to UTI as the fecal flora transferred from anal openings to vagina and may lead to kidney failure.In present study a total of 130 urine samples were taken from males and females patients who were examinated for UTIs in Zagazig University hospitals or attending Zagazig University outpatients clinics, Urology Department .These samples have been isolated from different ages of males and females ranged 9-76 years of males and 4-87 years of females. These samples were immediately tested for bacterial count on CLED agar, on the basis of samples which gave bacterial growth less than 105 CFU per ml in urine culture considered negative and were excluded but samples which gave bacterial growth ≥ 105 CFU per ml in urine culture considered positive , also these samples were cultured on CLED agar , nutrient agar , MacConkey agar and blood agar . The isolates were characterized via microscopic examination, and classified and identified to the species level according to the laboratory manuals and determinative keys of bacteriology.In the present study , the results demonstrated the Gram-negative bacteria were the most common cause of UTIs which present 62% of patients while Gram –positive bacteria were 13 % of patients and found 16.4% represent Candida albicans.The most frequent isolated species from UTIs patients were E.coli (43.9%), Staph. aureus (21.6%) , Candida albicans (16.4) , Klebsiella pneumoniae (14.7%), Pseudomonas aeruginosa (3.4%).Regarding the resistance and susceptibility of the uropathogenic organisms to the antimicrobial agents, the results showed the antibiotics ciprofloxacin, levofloxacin& norfloxacin are more effective against isolated pathogenic E.coli , where the percentage of susceptibility organisms to them is 96% followed by nalidixic acid 92%, gentamicin 84% and amikacin 76.5%. The isolated organisms also showed resistance to sulbactam /ampicillin with percent 100%.In the present study , the results demonstrated that alcoholic extracts of (clove , ginger ”fresh , dry” , peppermint, spearmint and thyme) were most effective plants extracts against selected isolates of E.coli . Also in case of cold water extracts of cinnamon, ginger ”fresh , dry” , peppermint, marjoram, lemon peel , orange peel and spearmint didn’t have any effect . On the other hand thyme was effective in case of cold water extracts. Also

cinnamon, ginger ”fresh , dry” , peppermint, lemon peel, marjoram, oliban, spearmint and thyme didn’t show any effect in case of boiled water extracts. But boiled extracts of clove has great effect against E.coli isolates.The effective concentrations of clove , ginger, rosemary , peppermint , thyme (alcoholic)and cold water extracts were 50%Combination between alcoholic extract of clove and antibiotics like (gentamicin , levofloxacin , amikacin , ciprofloxacin and norfloxacin) increase the antimicrobial agent effectivity of antibiotics against E .coli isolates.Protein analysis for E.coli isolates showed that there is difference in protein bands (there are many protein bands induced and other disappeared) between treated bacteria with effective materials (alcoholic extract of clove) and non treated bacteria (control).The results obtained from spectrum analysis (1HNMR and IR) for identification the antibacterial substance , illustrated that the effective compound in clove extract which represent as antimicrobial agent is eugenol.