Introduction

Infections of the urinary tract are the second most common type of infection in the body. There are an estimated 150 million urinary tract infections per year world wide **(Stamm and Norrby , 2001).**Urinary tract infections are the most common bacterial infections in women and account for significant morbidity and health care costs ***(*Gupta *et al.* , 2001).**

The human urinary system includes two kidneys, two ureters (the tube connecting each kidney to the bladder),the urethra (the passage way between the bladder and the outside of the body) and the urinary bladder. The key players in the system are the kidneys; the bean –shaped kidneys are compound tubular glands that remove liquid wastes from the blood in the form of urine ,this excretory product goes by way of two muscular tubes, the ureter ,to the bladder which stores the product until its elimination .The kidneys establish and help to maintain the concentration of electrolytes (for example chloride ,potassium ,sodium and bicarbonate) in the human body ,excrete poisonous substances and produce a hormone that aids the formation of red blood cells **(George and Max, 1988).**

Urinary tract infections (UTI) is a bacterial infection that affects any part of urinary tract .Normally ,urine is sterile and it is usually free of bacteria ,viruses and fungi because it contain a variety of fluids ,salts and waste products but the infection occurs when any organisms ,usually bacteria from digestive tract ,cling to the opening of the urethra and begin to multiply **(Meyhoff *et al.*, 1981 ;Jepson *et al.*, 2000**). Most of these organisms is *Escherichia coli* which normally lives in the colon and accounting for 75 to 90% of uncomplicated urinary tract infection isolates

(Nicolle, 2001). In addition to *E.coli* ,other organisms such as *Staphylococcus saprophyticus ,Klebsiella spp., ,Proteus spp., Enterococcus spp.,* and *Enterobacter* may be involved .In most cases bacteria travel to the urethra and multiply causing urethra infection (urethritis) and if the bacteria move to the ladder and multiply ; a bladder infection (cystitis) can occur. If the infection is not treated promptly ,bacteria may then travel further up the ureters to multiply and reach to the kidneys causing kidney infection(pyelonephritis) which more serious because it leading to kidney damage if a UTI is not treated for months or years. The urinary system is structured in a way that help ward off infection in which the ureters and bladder normally prevent urine from backing up toward the kidneys and flow of urine from the bladder help wash bacteria out of the body **(Liza *et al*., 2003;Bethesda , 2005 ;David *et al.*, 2008).**

Escherichia coli is the head of the large bacterial family , enterobacteriaceae, the enteric bacteria, which are faculatively anaerobic Gram- negative rods that live in the intestinal tracts of animals in health and disease. The enterobacteriaceae are among the most important bacteria medically. A number of genera within the family are human intestinal pathogens (e.g. *Salmonella, Shigella, Yersinia*).Several others are normal colonists of the human gasterointestinal tract (e.g. *Escherichia coli*, *Enterobacter, Klebsiella*), but these becteria, as well as, may occasionally be associated with diseases of humans **(Todar, 2007).**

Enteric bacteria belong to the family enterobacteriaceae, which are large group of Gram negative, peritrichously flagellated or non-flagellated straight rods with simple nutritional requirements. They grow

best under aerobic condition but also ferment carbohydrates by an anaerobic pathway **(Prescott *et al*., 2008) .**

Urinary tract infection should be categorized as complicated or un complicated .this helps the physician determine the appropriate diagnostic and management strategies. Uncomplicated urinary tract infection refers to infection of urinary tract by a usual pathogen in a person with normal urinary tract with normal kidney function while complicated urinary tract infection occurs where anatomical ,functional ,or pharmacological factors predispose the person to persistent infection , recurrent infection ,or treatment failure e.g. abnormal urinary tract ***(*Stamm and Hooton, 1993).**

Urinary tract bacterial infection are common in women as a fecal bacteria colonize the urethra and spread up the urinary tract to the bladder ,because women have a shorter urethra then men **(Todar, 2007).**

The antibiotic sensitivities of different strains of *E.coli* vary widely .As Gram negative organisms , *E.coli* are resistant to many antibiotics that are effective against gram – positive organisms .Antibiotics which may used to treat *E.coli* infection include amoxicillin as well as other semi –synthetic penicillins ,many cephalosporins ,trimethoprim –sulphamethoxazole ,ciprofloxacin , nitrofurantoin and amino glycosides **(Johnson *et al*., 2006)**.

The discovery and development of antibiotics have led to dramatic improvement in ability to treat infections diseases and is among the major advances of the 20^{th} century. Unfortunately ,development of effective antibacterial agents has been accompanied by the emergence of drug –resistant organisms due to irrational and over use of antibiotics ,failure to complete a course of treatment ,genetic versatility of microbes

and horizontal transfer of resistant genes among bacterial species. All the mentioned factors diminish the clinical effectiveness of antibiotics **(Amit and Shailendra, 2006) ; (Aibinu *etal*. , 2007).**

Emerging antibiotic resistance is a worldwide problem that has led to the need for development of novel antimicrobials. Evaluation of natural products as safe and effective antimicrobial agents is one of the scientific strategies to combat the menace of drug-resistant pathogens. Natural products are in use for the treatment of infectious diseases since times immemorial and plants have been an integral part of traditional medicinal system all over the world. Recent years have witnessed a renewed interest in homemade remedies as an impressive number of modern drugs have been developed from plants **(Kaur and Daljit, 2010).**

In recent times ,there has been renewed interest on plants as source s of antimicrobial agents. Clove is commonly used as an anesthetic in the relieve of tooth ache in dentistry .It is also used as a carminative in herbal recipes ,signifying possible antimicrobial properties **(Odugbemi , 2006).**