Original Article

The incidence of Lower (UTI) according to the age and sex in Ramadi City.

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Summary:

Back ground: A urinary tract infection is one of the most common diseases occurring from neonate up to geriatric age groups

Patients and Methods: A total of (100) Midstream urine (MSU) samples were collected from patients having signs and symptoms of Lower urinary tract infection. These patients were attending Urology Clinic, Ramadi General Hospital.

Result: Culturing of (100) MSU samples on MacConky and blood agar resulted in (5) types of bacteria which included*: Escherichia coli* (46%) and it was found the most frequent bacteria causing LUTI. This is followed by *Klebsiella pneumonia* (23%), *Pseudomonas aeruginosa* (13%), *Proteus mirabilis* (10%) and *Staphylococcus epidermidis* (8%).

Conclusion: Out of the total studied samples, (38%) were males and (62%) were females. It was found that the age of frequent infection was 60 year in male, while in female was 16-35 year.

Key word: MSU, E. coli, LUTI.

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Introduction:

Urinary tract infection (UTI) is one of the most common diseases, occurring from the neonate up to geriatric age groups (1). The incidence ratio of Lower (UTI) in middle-aged (16-35) women to men is 30:1; however, during later decades of life, the ratio of infection in women to men with bacteriuria progressively decreases (2,3,4). Women are especially susceptible to Lower (UTI) for reasons that are poorly understood. One factor may be that a woman's urethra is short, allowing bacteria quick access to the bladder. Also a woman's urethral opening is close to sources of bacteria from the anus and vagina. In men, lower (UTI) frequently appears on the ages of more than 60 year due to several reasons, the important one is prostate syndromes .*Escherichia coli* is the most common infecting organism in patients with uncomplicated UTI (5). Other gram-negative bacteria causing UTI include *Proteus, Klebsiella, Citrobacter, Enterobacter,* and *Pseudomonas spp.*

Material and methods:

A Total of (100) Mid Stream Urine samples were obtained during the period from (April to September 2005). These samples were collected from patients attending the out-patients Urology Clinic, and patients admitted to the Urology Department, Ramadi General Hospital. These samples were collected from both sexes according the patients from which the urine samples were collected, showing symptoms of lower urinary tract infection by having more than 3 WBCs / HPF in male and more than 5 WBCs /HPF in female in their urine examination (6).

From all the patients' special notes were taken regarding sex, age, medical history and residence. Mid stream urine samples were collected in clean and sterile screw cupped bottles or disposable universal containers (7,8). The urine was mixed thoroughly and the top of the container was removed, the loop was inserted vertically into the urine to allow urine to adhere to the loop. Then the loop was touched to the center of the nutrient agar from which the inoculum is spread in a line across the diameter of the plate repeated for blood agar and MacConkey agar. The plates were incubated aerobically for 24hrs at 37°C; colonies were counted on each plate.

Results:

The patients were used in the present study were distributed into (38) males and (62) females Table (1). Their age were ranged between 7-68 years. Figure (2).

Bacterial growth was obtained from culturing of (100) MSU samples, According to the different morphological, physiological and biochemical characters (IMViC). 5 types of bacteria was isolated and as following: *E.coli* (46%), *K.pneumoniae* (23%), *Ps.aeruginosa* (13%), *P.mirabilis* (10%) and *Staph.epidermidis* (8%). This study showed , *E.coli* was the most frequent bacteria causing (LUTI) Figure (1).

In this study it was found that, the female to male ratio was higher in all isolated bacteria except for *Proteus mirabilis*. It was 1.875:1 for *E. coli*, 1.3:1 for *K. pneumoniae*, 1.09:1 for *Ps. aeruginosa*, 0.6:1 *P. mirabilis*, and 1.6:1for *Staph. epidermidis* table 1.

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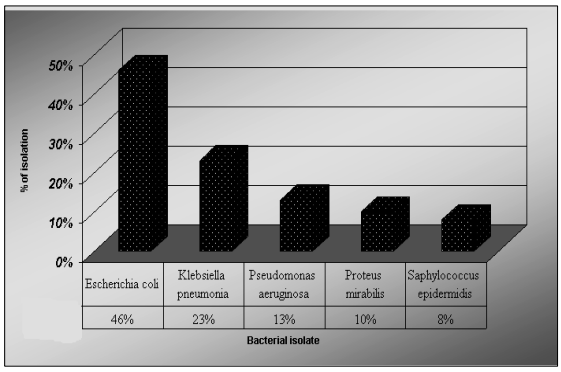

Figure (1).The percentage of the most isolated bacteria in Lower urinary tract infection

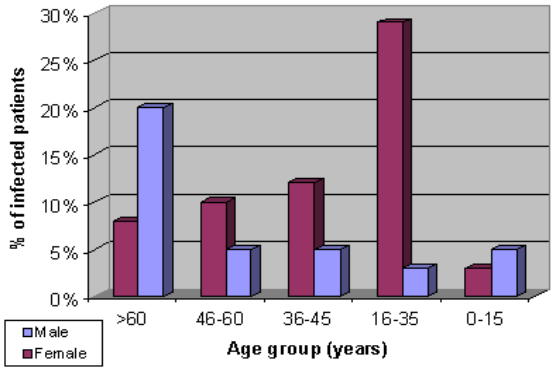

Figure (2) shows the relationship between the age group of patients and the percentage of infection in both sexes.

Table (1) Shows the distribution of the isolated bacteria and the female to male ratio

Species / SEX	*Escherichia coli*	*Klebsiella pneumoniae*	*Pseudomonas aeruginosa*	*Proteus mirabilis*	*Staphylococcus epidermidis*	Total
Male (%)	15	10	4	6	3	38
Female (%)	31	13	9	4	5	62
Total	46	23	13	10	8	100
F: M Ratio	1.875	1.3	1.16	0.6	1.6	

The relationship between the age of the patient and the percentage infection was studied, the most frequent infected age in males was 60 year, while in females was 15-35 year (Figure 2).

Discussion:

The present study on patients admitted to urology department at Ramadi general hospital showed that females were highly suspitable for lower urinary tract infection than male. This finding similar to the published data which suggest that females show high incidence of lower urinary tract infection than males (9,10). It is found in the present study that the female to male ratio is 1.38:1, high female to male ratio also find by other workers, which is 2:1 by Maskell and Pead (11), 1.5:1 by Al-Ubaidy (12) in Baghdad and 1.28:1 by Al-Fahdawi (10) The findings of the present and other work indicate that lower urinary tract infection is more common in females than male and they may be due to the shorter length of the urethra, closer proximity between their anus and the urethral opening. Also poor hyegen with cleaning and poor fluid in take, sexual intercourse and the use of a diaphragm with spermicide or without spermicide, all these factor may play a role in increasing the female to male ratio changes in the vaginal environment that occur alone with menopause, disappearance of the previously predominant *Lactobacilli* from the vaginal microflora and a rise in pH may have a great effects on the increased female to male ratio (13). Further more hormonal changes during sexually active women and pregnancy lead to less peristaltic activity of the ureter, the bladder and the urethra (14,15). Absence of bactericidal prostatic secretions and sexual intercourse cause minor urethral trauma, and force introital bacteria into the bladder (16).In addition, the female to male ratio was higher in all bacterial isolates except for *Proteus mirabilis* where the female to male ratio was 0.6:1. This difference may be attributed to variation of sample size. *Proteus* bacilli are commonly present in the preputial sac and in the prostatic duct of uninfected male children and thus act as a source of active infection (17).The finding of the present study regarding the patient's age showed that lower urinary tract infection is higher than 60 years in male. Al-Hadithi (18) also indicated that the age of more than 60 year is the most frequent infected age in males. This results may be due to decrease of the immune activity which will decreased with the increase of the age, in addition, serious diseases such as Diabetes,

instrumentation and obstruction, which may lead to decrease of urine flow, keeping urine for longer time in the bladder give a chance for bacterial colonization (19,20). In the female the most frequent infected age is (16-35) years, similar finding was seen by Ledingham & Warrell (3)and Orrett (4). They found that urinary tract infection is popular in community, affects both sexes at different age groups especially females of 16-35 years of age. In addition study of Stamm & Hootem (19) showed that acute uncomplicated urinary tract infection is a common in women; and the highest incidence is in young sexually active women at 20-40 years of age.

Conclusion:

Out of the total studied samples, (38%) were males and (62%) were females. It was found that the age of frequent infection was 60 year in male, while in female was 16-35 year.

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