

Effects of Antibiotics (Ciprofloxacin – Augmentin – Gentamicin – Norfloxacin – Ampicillin) which are used for Treatment of Urinary Tract Infections in Female Patients

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Abstract:

The study included a statistical collection of 100 cases during 2017 for women with urinary tract infections (UTI) in Al-Dahra Hospital - Ibn Sina Clinic - Aqba Laboratory for Medical Analysis in Bani Walid city. It was noted that the most common age group affected by the disease was (26-30) years, which represented 39% and it was the highest age group affected compared to others. The study showed that the most important and most effective antibiotics used for urinary tract infection treatment in this period was the antibiotic (Augmentin) which represented 49%., furthermore the urinary tract infection is more common in winter season with high incidence up to 59%. We have observed that the increasing of the bacterial resistance of our local isolates under study may be due to the large random use of antibiotics, which allowed for increased bacterial resistance to various antibiotics.

Key words: Augmentin; Urinary Tract Infections; Ciprofloxacin; Gentamicin

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1. INTRODUCTION:

Urinary tract infection is one of the most common medical problems in most countries of the world. It comes as the 2nd common medical problem after respiratory tract infection.

Urinary tract infection is a common problem in women and can lead to serious complications. The results of previous studies have found that six bacterial strains represent the main cause of urinary tract infections in women:

- 1- Proteus
- 2- Aeruginosa
- 3- Pseudomonas
- 4- Agalactiae
- 5- Eschericia Coli
- 6- Klebsilla Pneumoniae
- 7- Staphylococcus Aureus

Antibiotics are chemical substances that are biologically produced and have the ability to limit the spread of infectious diseases which caused by the pathogenic bacteria of the host. One of the most important qualities of the antibiotic which used to treat urinary tract infections is to be safe to use and to be excreted in a suitable concentration , and has no effect on intestine flora or (Normal Flora) of other places and does not lead to resistance.

2. MATERIALS AND METHODS OF RESEARCH:

The temporal and spatial limits of the study: The study was conducted between the first of September 2017 and the end of December 2017, by studying a number of 100 women who visited the following clinics (Ibn Asina clinic, Al-Dahra clinic, and Aqba Laboratory for medical analysis) in the city of Bani Walid during the study period. There was also a study of 200

women visited the same clinics from January 1, 2015 until the end of December 2016.

3. Samples:

The number of samples studied was 100 samples.

4. Used equipments :

The study was focused on women by age, diagnosis, seasons, type of bacteria causing the disease, associated symptoms of the disease, and antibiotics used for treatment.

5. Statistical analysis :

Based on the statistical study conducted using the(Excel Word program), the number of cases was determined according to the tools used, the percentages extracted and an explanatory diagram of the data obtained.

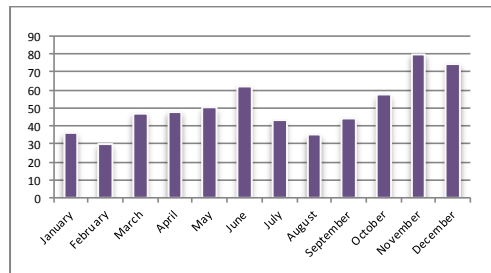


Figure (1) shows the number of UTIs per month in 2015 from clinics and laboratories

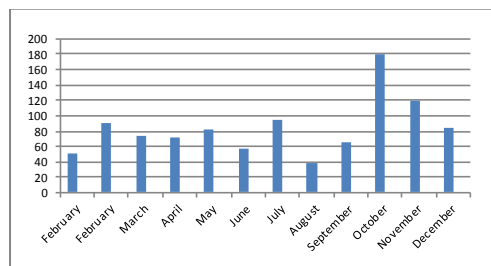


Figure (2) shows the number of cases of UTIs by 2016 months

The relation between UTI infection and age groups:

The results of the study showed that the most susceptible women to urinary tract infections were the age group (26-30). The number of cases was (39) cases (39%), the lowest number was in age group (41-45).

Table (1) shows the number of women infected by 2017 by age.

The age	Number of cases	Percentage %
20-15	14	%14
25-21	29	%29
30-26	39	%39
35-31	5	%5
40-36	3	%3
45-41	2	%2
50-46	3	%3
More than 50 years	5	%5
Total	100	%100

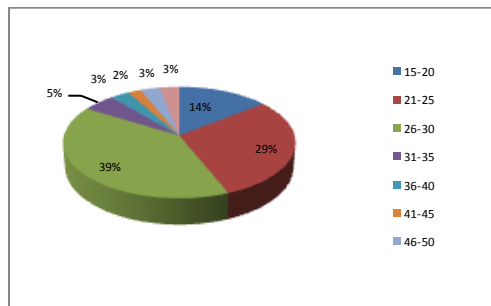


Figure (3) shows the number of cases infected with UTI for the year 2017 by age

The relation between UTI infection and symptoms of the disease:

The results showed that the most common symptom was pain and burning micturition (70%), and the least common symptom was fever with chills (5%) and the rest of the symptoms varied in appearance.

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Table (2) shows the symptoms associated with the year 2017

Symptoms	Number of cases	Percentage %
Hematuria	11	11%
Supapubic pain	14	14%
dysuria	70	70%
Fever and chills	5	5%
Total	100	100%

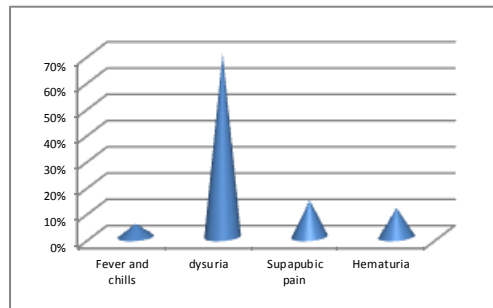


Figure (4) shows the percentage of symptoms associated with UTL 2017

The relation between UTI infection and the recurrence of the disease:

The results of the study showed that the number of recurrence of the disease per a year was once (60%) ,however; the recurrence per month was (10%)

Table (3) shows the number of infected cases for the year 2017

Number of cases of the disease	Number of cases	Percentage %
One time a month	10	%10
Twice a month	13	%13
One time a year	60	%60
Several times a year	17	%17

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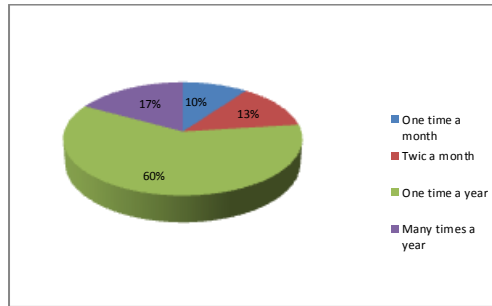


Figure (5) shows the percentage of UTL cases of 2017 for the number of injury times

The relation between the overall UTI infection rate and the most common used antibiotic for treatment:

The most common antibiotics used to treat urinary tract infections was Augmentin (49%), then ampicillin (19%), then Norfloxacin (ciprofloxacin), 13 and then Gentamicin (6%).

Table (4) shows the antibiotics and the number of infected cases for the year 2017

Antibiotic	Number of cases	Percentage %
ciprofloxacin	13	%13
Augmentin	49	%49
Ampicillin	19	%19
Gentamicin	6	%6
Norfloxacin	13	%13
Total	100	%100

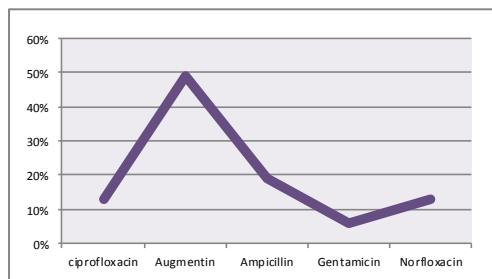


Figure (6) shows the number of cases for 2017 according to antibiotics

The relation between UTI infection and the seasons:

The results of the studies showed that the most UTI infections were in winter (59%), summer (19%), spring (17%) and autumn (5%).

Table (5) shows the number of women infected for the year 2017 according to the seasons of the year.

Season	Number of cases	Percentage %
Winter	59	%59
Spring	19	%19
Summer	17	%17
Autumn	5	%5
Total	100	%100

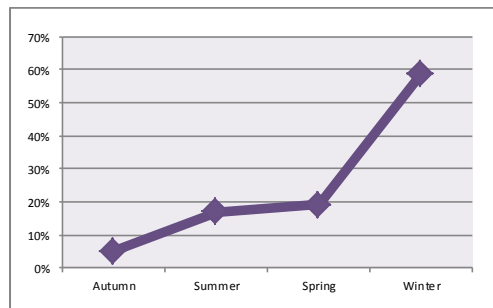


Figure (7) shows the number of infected cases for the year 2017 according to the seasons of the year

The relation between UTI infection and the duration of treatment:

The study showed that the shortest treatment period was 5 days (57%) and the longest was 21 days (1%).

Table (6) shows the number of infected cases for the year 2017 period of taking antibiotics.

Antibiotic period	Number of cases	Percentage %
5 days	57	%57
7 days	25	%25
10 days	14	%14
14 days	3	%3
21 days	1	%1
Total	100	%100

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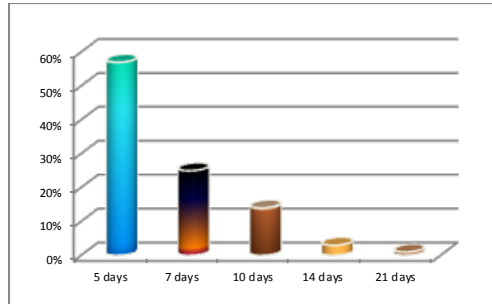


Figure (8) shows the percentage of UTI cases for 2017 according to antibiotic treatment period

The relation between UTI infection and family history of UTI:

The study indicated that there was negative family history of UTI in 62% and positive family history of UTI in 38% .

Table (7) shows the number of infected cases for the year 2017 according to the date of the family.

Does the family have a history of urinary tract disease	Number of cases	Percentage %
Yes	38	%38
No	62	%62
Total	100	%100

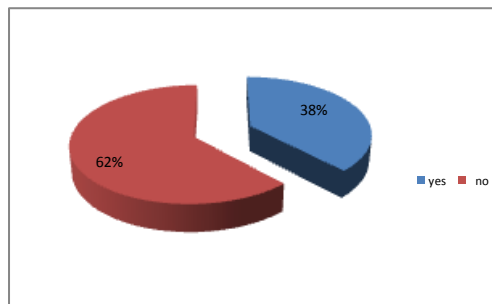


Figure (9) shows the percentage of UTI cases for 2017 by family history

The relation between UTI infection and drinking water:

The study showed that urinary tract infections have a close relationship with drinking water quantities. The number of responses (yes) was 44% and no (56%).

Table (8) shows the number of infected cases for the year 2017 according to drinking water.

Drink water	Number of cases	Percentage %
Yes	44	%44
No	56	%56
Total	100	%100

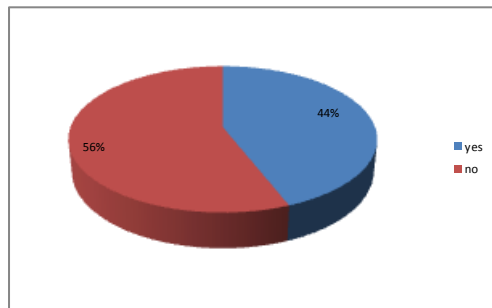


Figure (10) shows the percentage of infected cases for 2017 by drinking water

The relation between UTI infection and practice of home therapy:

The study showed that most cases were treated with home treatment for urinary tract infections where the responses were (yes) by (85%) and (no) by 15%.

Table (9) shows the number of infected cases and the practice of home treatment.

Practice home therapy	Number of cases	Percentage %
Yes	85	%85
No	15	%15
Total	100	%100

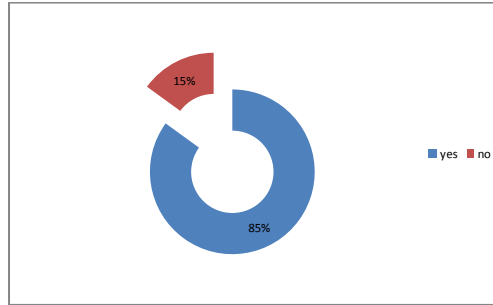


Figure (11) shows the percentage of UTI-infected cases and the practice of home therapy

The relation between UTI infection and the quality of Nutrition:

The study indicated that the most cases answered (yes) by (80%), while those who answered (no) represented (20%),

Table (10) shows the number of cases infected by the type of food.

Food, quality and relationship	Number of cases	Percentage %
Yes	80	%80
No	20	%20
Total	100	%100

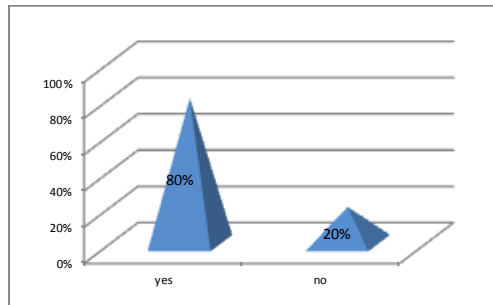


Figure (12) shows the percentage of cases by type of food (SPSS.2009)

DISCUSSION:

Previous available studies have shown that urinary tract infections are more common in females than males because of

the differences in the anatomical and histological structures of the Urinary tract system in men and women, furthermore the urinary system in men is less susceptible to stool contamination than women, also some studies have shown that the prostatic gland secretions have an anti-bacterial function against bacterial infection.

Current study has shown that urinary tract infections are more common in certain age groups, and that the most affected groups are the adult category followed by the aged group and then the adolescents category, and the incidence of UTI infection in this current study was consistent with the results of (Winberg et al., 1974) study which showed the incidence of UTI infection in women is more than men in all age groups.

Studies have also confirmed that adult women are the most vulnerable age group to UTI infection due to several physiological factors such as menstrual cycle.

Our Study has shown (as mentioned in Table (2) and Figure (7) that the change in the normal flora and the change in the pH of the vagina lead to settlement of the bacteria in the epithelial cells which facilitates the infection. The presence of bacteria in the surrounding area of the urinary tract and the vaginal entrance is a predisposing factor resulting in women exposure to urinary tract infection. In the study of the bacterial susceptibility to antibiotic, our study examined antibiotics belonging to the Penicillin group, which is involved in the cell wall synthesis like Piperacillin(PIP) Imipenem(ATM) Aztreonam (ATM) Augmntentin (AMC)

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