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Objectives

Urinary tract infections are one of the commonly occurred infections. Especially patients who undergo urinary tract procedures, who have pregnancy or comorbid diseases are needed to be hospitalized and treated with broad spectrum antibiotics. In this study, we have evaluated the patients who were hospitalized in our clinic for the urinary tract infection.

Result

This study included 104 patients with urinary tract infection followed in our clinic. Of patients, 65 (62.5%) were female, mean age was 60.7 ± 21.5 years. Twenty-four patients were hospitalized in last three months; they were discharged from the hospital mean 18.7 ± 17.9 days ago. Fever was detected in 86 patients (82.7%), dysuria in 54 (51.9%) and costovertebral angle tenderness in 44 (42.3%). Costovertebral angle tenderness was more frequently detected in female patients and it was statistically significant ($p=0.000$).

Of patients, 27 (26%) had various procedures involving urinary tract; six of these procedures were performed in last one month. The procedures were associated with kidney in 10 patients (37%), prostate in six (26%), bladder in seven (22%), urethra in four patients (15%). The most frequently detected comorbid diseases were hypertension, diabetes mellitus and coronary artery diseases (37%, 27% and 17%, respectively). Fifteen patients were pregnant (14%).

Urinary tract ultrasonography was performed in 85 patients, 26 had no pathological findings. In other patients, there was increased echogenicity in renal parenchyma, hydronephrosis and renal stones (28%, 23% and 9%, respectively).

Laboratory investigations revealed that mean white blood cell count was 13318 /mm³, mean sedimentation rate 46 mm/h and mean C reactive protein level 10.8 mg/dL.

Methods

Patients followed in our clinic for urinary tract infections between June 2012 and November 2013 involved in our study. Patient's epidemiological and clinical features, laboratory values were searched from patient's records and hospital information system retrospectively, and were recorded on prepared forms. Patients characteristics were evaluated according to whether they have or not urinary procedures

Table 1. Characteristics of patients with and without urinary procedures

	Patients with urinary procedures	Patients without urinary procedures	p
Gender (Male/Female)	19 (70)/8 (30)	20 (26)/57 (74)	0.000
Age	61.8±18.3	60.3±22.6	0.754
Diabetes mellitus	9 (33)	19 (25)	0.383
Coronary artery disease	5 (19)	13 (17)	0.847
Chronic renal disease	2 (7)	4 (5)	0.671
Urinary catheter	3 (11)	13 (17)	0.554
CIC	4 (15)	1 (1)	0.016
Disuria	14 (52)	40 (52)	0.993
CVAT	6 (22)	38 (49)	0.014
Fever	20 (74)	66 (86)	0.169
Length of stay	9.7±5.7	9.2±7.0	0.742
Sedimentation	32±31	46±31	0.051
C reactive protein	9.4±9.5	10.8±7.9	0.461
WBC	10.5±4.5	13.3±5.6	0.022

CIC: Clean intermittent catheterization, CVAT: Costovertebral angle tenderness

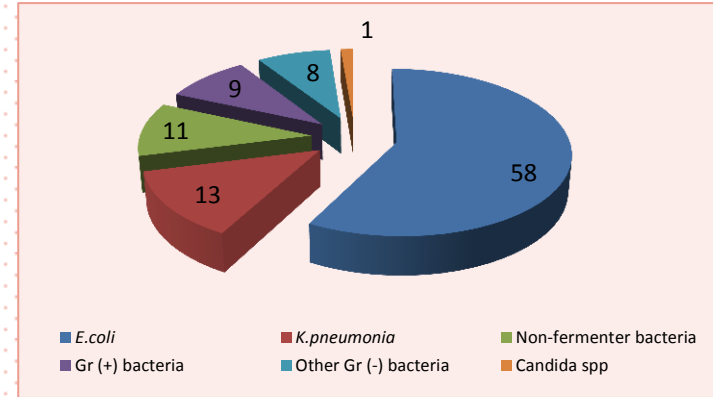


Figure 1. Isolated microorganisms from patients

The most frequently isolated microorganisms in the urine culture were *Escherichia coli* (58%) and *Klebsiella spp.* (13%) (Figure 1). ESBL rate was 35%. The mostly used antibiotics for the treatment were ceftriaxone (59%) and ertapenem (18%). Mean length of stay was 9.2 ± 7.0 days.

Among 27 patients who undergone procedures, 19 were male (70%), it was statistically significant ($p=0.00$). There was no statistically difference between patients with or without urinary procedures in terms of comorbid diseases, urinary symptoms, fever, length of stay, sedimentation and C reactive protein ($p>0.05$) (Table 1). In these patients *E. coli* (41%) and *Klebsiella spp.* (18%) were the mostly isolated microorganisms similar to whole patients. However ertapenem was the most frequently used antibiotic (41%) ($p=0.001$). ESBL rate was 2.5 times higher than patient without procedures but it wasn't statistically significant.

Conclusion

We found that ESBL rate was higher in patients with procedures involving urinary tract and ertapenem had more used antibiotic in these patients than ones without procedures.