

RISK FACTORS FOR RECURRENT URINARY TRACT INFECTION IN PATIENTS WITH EXTENDED SPECTRUM BETA-LACTAMASE-PRODUCING BACTERIA

Hypothesis / aims of study

The prevalence of ESBL-producing bacteria is gradually on the rise^{1,2}. But there are few reports about risk factors for recurrent urinary tract infection (UTI)³ of ESBL-producing bacteria. This study examined the antibiotics sensitivities of organism and risk factors for recurrent extended-spectrum β -lactamase (ESBL) infection in patients with UTI in the tertiary hospital.

Study design, materials and methods

A total of 88 patients \geq 19 years who were diagnosed with UTI with ESBL group in department of urology from January 2000 to September 2011 were enrolled. Risk factors were assessed based on age, gender, infectious organism, co-morbidities. Cases were identified through hospital infection control department which deals with ESBL surveillance records. According to the number of infection patients were divided into two groups: a single infection group and recurrent infection group. Factors suspected to be risk factors for the recurrent infection by ESBL-producing bacteria were analyzed by Mann-Whitney U-test and Fisher's exact test.

Results

Among total 88 patients with ESBL infection, 68 had a single infection and 20 had recurrent infection. Patients' mean age was 60.7 ± 13.1 (19-88) years. Bacteria were resistant (including intermediate and resistant) to carbapenem (2.3%), amikacin (22.4%), ciprofloxacin (85.3%), levofloxacin (91.1%), moxifloxacin (90%), gentamicin (75%), piperacillin/tazobactam (15.8%), piperacillin (94.4%) and trimethoprim-sulfamethoxazole (74.7%). There were no differences in the baseline characteristics between two groups (Table 1).

Interpretation of results

Baseline characteristics and comorbidities were not associated with recurrent urinary tract infection by ESBL producing bacteria.

Concluding message

There were no associated factors with recurrent urinary tract infection by ESBL producing bacteria.

Table 1. Comparison of baseline characteristics and comorbidities between non-recurrent and recurrent urinary tract infection group with ESBL.

| | Non-relapse (n=68) | Relapse (n=20) | p-value |
|------------------------------|--------------------|----------------|---------|
| Mean age (yr) | 44.8 | 43.6 | 0.850 |
| Sex (%) | | | 0.691 |
| Male | 26 | 9 | |
| Female | 39 | 11 | |
| Bacteria (%) | | | 0.514 |
| E.coli | 54 | 15 | |
| K.pneumonia | 11 | 5 | |
| Diagnostic cause (%) | | | 0.675 |
| No symptom | 26 | 8 | |
| Acute cystitis | 19 | 8 | |
| Acute pyelonephritis | 1 | 0 | |
| Urinary tract infection | 2 | 0 | |
| Operation site | 2 | 0 | |
| Symptom (%) | | | 0.847 |
| No | 28 | 8 | |
| Yes | 38 | 12 | |
| WBC count (%) | | | 0.625 |
| Normal | 51 | 15 | |
| Abnormal (<4,000 or >10,000) | 17 | 5 | |
| History of ICU admission (%) | | | 0.622 |
| No | 61 | 18 | |
| Yes | 4 | 2 | |
| Previous Ertapenem use (%) | | | 0.848 |
| No | 61 | 19 | |
| Yes | 4 | 1 | |
| General comorbidity (%) | | | |
| Cardiac disease | 17.6 | 15.0 | 0.541 |
| Malignant disease | 35.3 | 45.0 | 0.297 |
| Immune suppressed disease | 16.2 | 10.0 | 0.390 |

| | | | |
|------------------------------|------|------|-------|
| Pulmonary disease | 7.4 | 0 | 0.266 |
| Trauma | 13.2 | 5.0 | 0.283 |
| Urological comorbidity (n) | | | |
| Neurogenic bladder | 20.6 | 15.0 | 0.229 |
| Benign prostatic hyperplasia | 19.1 | 15.0 | 0.385 |
| Urinary tract stone | 7.4 | 5.0 | 0.247 |
| Urinary tract intervention | 63.2 | 80.0 | 0.187 |
| Urinary tract malignanct | 22.1 | 40.0 | 0.064 |
| Recurrent UTI | 16.2 | 10.0 | 0.243 |

References

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Disclosures

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