Inappropriate use of antibiotics has developed an increased incidence of resistant strains in Urinary Tract Infections (UTI) in the past decades. The incidence of Extended Spectrum Beta Lactamase (ESBL) agents has increased in community acquired UTI, reaching up to 11% in some studies.

Few reports have been published about risk factors for development of ESBL producing bacteria in UTI. Our aim was to compare the causal agents, antimicrobial resistance and risk factors associated with ESBL-producing bacteria between hospitalized, community-acquired, complicated and uncomplicated UTI.

Methods

Patients with UTI: Mar to Oct 2015

UTIs: n=335

- Complicated n=122 (36.4%)
- Community-acquired n=231 (65.5%)

- Complicated n=170 (73.6%)
- Community-acquired n=61 (26.4%)

UTI classification

- Hospital-acquired n=122 (36.4%)
- Community-acquired n=231 (65.5%)

UTI type

- Uncomplicated
- Complicated

Results

UTI type

- Hospital-Acquired UTI n=122
- Community-Acquired UTI n=231

E. coli n=61

- MDR: 100% (61/61)
- Community Acquired UTI:
  - Uncomplicated: 88.5%
  - Complicated: 100%
- Complicated (% R) 32.2 0.6 57.2 39.4 48.3 46.7 5.0 45.6 2.2 32.2 44.4 2.8

Genotype

- MIC50 (μg/mL), MIC90 (μg/mL) and % of resistance to antibiotics of the UTI-causing E. coli


- p-value

- 0.042 0.689 0.676 0.025 0.041 0.001 0.002 0.707 0.028 0.930 0.823


Conclusions

Most of patients had community-acquired and complicated UTI. We confirmed E. coli as the major causal agent of UTI. Infection with ESBL-producing bacteria was more frequent in patients with complicated UTI, diabetes mellitus, immunodeficiency and the previous use of antibiotic therapy. Isolates recovered from patients with complicated UTI showed higher resistance to gentamicin, ceftriaxone, ciprofloxacin, levofloxacin and aztreonam.

References

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