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Clinical and bacteriologic epidemiology of urinary infection caused by extended-spectrum beta-lactamase-producing enterobacteriaceae in hospitalized patients

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Introduction: Enterobacteriaceae are the most frequently isolate bacteria in community as well as nosocomial acquired urinary tract infections. The incidence of extended-spectrum beta-lactamase-producing enterobacteria (ESBLE) has regularly increased over the last few years. However, little is known about epidemiology of ESBLE carries in Tunisia. The aim of this study is to describe the epidemiology, clinical and antibiotic susceptibility of EBLSE at infectious diseases service in Tunisian university hospital (Monastir).

Material and methods: This retrospective study included all ESBLE isolated from urine samples of patients admitted at infectious diseases service in our hospital between January 2008 and December 2013. Urinary tract infection by ESBLE was confirmed by the Laboratory of Microbiology in the university hospital, Monastir.

Results: Seventy five ESBLE were collected. The number of strains was increased from 27% in 2008 to 45% in 2013. The median age was 50 years (21-79 years). The odds ratio was 1:36. The risk factors of ESBLE were: Previous hospital admission in the last year 73%, previous antibiotics uses 50%, recurrent urinary tract infection 46%, diabetes mellitus 38.5%, suprapubic or urinary catheter 23%, benign prostatic hyperplasia 15% and lithiase renal 11.5%. However, 7.5% of patients carrying ESBLE admitted had no risk factor. Pyelonephritis was diagnosed in 92%. Only 35% of urinary infections were nosocomial. *Klebsiella pneumoniae* was involved in 70% of all cases of urinary tract infections identified, *Escherichia coli* accounted for 16% of isolated strains, *Enterobacter cloacae* for 12% and *Citrobacter freundii* for 2%. The frequency of ESBLE resistance to gentamicin, amikacin, tobramycin, fluoroquinolones, trimethoprim + sulfamethoxazole, fosfomycin and furadione were 70%, 10%, 65%, 84%, 60%, 20% and 35% respectively. 15.5% strains were multiresistant (ESBLE + fluoroquinolones resistance + aminoglycosides resistance). Two strains were resistant to imipenem.

Conclusion: Characterization of ESBLE is essential to better understand their mode of dissemination. Their emergence in our service is impairing both therapeutic and health care. It requires a much better control of antibiotics prescriptions and therefore an important multidisciplinary implication.

Biography

Yosr Kadri is a medical assistant in Microbiology at Monastir's faculty of medicine. She is a bacteriologist, 8 articles were published in an international journal. She has published 10 papers in different journals.

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