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Abstract

Background: Urinary tract infection is one of the most common infections and its treatment is complicated by the emergence of antibiotic resistance. Resistance patterns of organisms differ between community-acquired and hospital-associated urinary tract infections.

Aims: The aim of this study was to determine the most effective antibiotics against uropathogens and if antibiotic resistance differed by setting (inpatient versus outpatient).

Methods: This 2016–2017 cross-sectional study examined 300 midstream clean-catch urine samples with positive culture (150 outpatient and 150 inpatient samples) for the uropathogens isolated and the resistance of these pathogens to different antibiotics. Samples were obtained from the laboratory of Baharloo hospital, Tehran. The differences in antibiotic resistance between inpatient and outpatient uropathogens were analysed using the chi-squared test.

Results: Escherichia coli (72.0% of the 300 samples) and Klebsiella spp (13.0%) were the most common uropathogens isolated. A greater proportion of inpatient samples showed resistance to ceftriaxone, cefixime, sulfamethoxazole–trimethoprim, ciprofloxacin and nalidixic acid than the

outpatient samples (P 65 years than the age group 18–65 years (Table 1).

The pathogens isolated from the 300 samples were: Escherichia coli (72.0%), followed by Klebsiella spp (13.0%), Enterobacter spp (6.8%), Pseudomonas spp (5.7%), Proteus spp (1.8%), Acinetobacter spp (0.36%) and Citrobacter spp (0.36%).

The least effective antibiotic for Gram-negative bacteria was ampicillin–sulbactam (51.3% of the samples were resistant), followed by piperacillin-tazobactam (50.7%) and ampicillin (50.3%; Table 2). A significantly greater proportion of inpatient samples than outpatient samples with Gram-negative pathogens were resistant to: cefepime (P = 0.024), ceftriaxone (P