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Antibiotic resistance profile of uropathogens strains implicated in the etiology of the urinary tract infections

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Introduction & Objectives: Starting from the idea that antimicrobial resistance is now considered a global health treat, we analyzed the most common uropathogens implicated in the urinary tract infections (UTIs) among patients from our clinic and their resistance to the most common antibiotic agents used to treat them.

Materials & Methods: The retrospective study aimed to determine the uropathogens involved in UTIs in patients admitted to and presented at the ER of Clinical Hospital Prof. Dr. Theodor Burghele Bucharest. We analysed the resistance patterns for the action of the appropriate antibiotics for the isolated strains of urine specimens in the hospital's laboratory.

Results: Between 1st October and 30th November 2018 there were analysed 2689 urine samples, of which 595 presented a number of yielded colonies ≥ 105 CFU/mL (22,12%). The most frequent isolate uropathogen was E.Coli 254 (42,68%), followed by Klebsiella 119 (20%), Enterococcus spp. 114 (19,15%), Proteus 42 (7,05%), Staphylococcus 37 (6,21%) and P.aeruginosa 29 (4,87%).
Regarding the resistance rates of the most common uropathogens in our clinic, E.Coli was tested for Amikacin with the highest resistance (R) for Levofloxacin 82(32,28%), followed by Amoxicillin-Clavulanic acid 62(24,40%), Nitrofurantoin 33(12,99%), Ceftazidime 29(11,41%), Aztreonam 29(11,41%), Amikacin 12(4,72%), Meropenem=0, Imipenem=0 and Fosomycin=0; the second most common uropathogen was Klebsiella with the highest resistance rates for Amoxicillin-Clavulanic acid R=64(53,78%), followed by Levofloxacin R=40(33,61%), Aztreonam R=38(31,93%), Ceftazidime R=37(31,09%), Amikacin R=22(18,48%), Imipenem R=18(15,12%) and Meropenem R=17(14,28%).

Conclusions: The conducted retrospective study revealed that E.Coli was 100% sensitive to Fosfomycin, Imipenem, Meropenem and high-level resistance to Levofloxacin (R=32,28%), followed by Amoxicillin-Clavulanic acid (R=24,40%). The tested Klebsiella strains showed increased resistance to Amoxicillin-Clavulanic acid, 3rd generation cephalosporin and Levofloxacin and high sensitivity to Amikacin and Carbapenems.