

Prevalence of multidrug-resistant *Klebsiella pneumoniae* strains isolated from patients with cardiovascular disease

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ABSTRACT

Klebsiella spp. are common Gram-negative pathogens, frequently encountered in nosocomial infections. The production of antibiotic-inactivating enzymes, such as ESBL (extended-spectrum beta-lactamases) and carbapenemases associated with multidrug-resistant (MDR) phenotypes are increasingly reported in the last decade, leading to very limited therapeutic options of the produced infections. The purpose of this study was to highlight the antibiotic profile of *Klebsiella* spp. strains isolated from clinical samples in patients with cardiovascular disease.

Materials and Methods: A number of 256 *Klebsiella* strains isolated from different clinical specimens were analysed for the antimicrobial susceptibility profiles testing by disk - diffusion and Vitek2 automated system. ESBL production was confirmed by the double disk test and carbapenemases producing by the modified Hodge test and E-tests.

Results: Out of the 256 isolated strains, multi-drug resistance (cephalosporins/aminoglycosides/quinolones) was encountered in 149 (58%) strains. A number of 53 (21%) strains were ESBL producers and 96(38%) were resistant to carbapenems, out of which, 41 (43%) were carbapenemase positive.

Conclusion: Due to the extremely low therapeutic alternatives in case of infections produced by MDR strains rapid identification of colonized or infected patients and screening of carriers, together with the routine detection of ESBL and carbapenemases by standard methods is highly recommended to be available in every clinical laboratory, to achieve effective antibiotic resistance management policies.

Key words: antibiotic susceptibility profile, ESBL, MDR, carbapenemases, double disk test, Modified Hodge test, E-test

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