Intestinal colonization of residents of long-term care facilities and nursing homes in Braga area with Multidrug-resistant Gram-negatives

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Aim: The aim of our work was the detection of Enterobacteriaceae isolates producing extended-spectrum beta lactamasases (ESBL) and isolated with reduced susceptibility to carbapenems, in the intestinal flora of institutionalized-residents in extra-hospital-health-care facilities in Braga region.

Introduction: Care of aging population has been a growing challenge to public-health and health-care providers. Due to the disabilities of older people, there is a growing need for long-term care facilities (LTCF) and nursing homes (NH). This brings a new paradigm for the spread of bacteria showing multidrug-resistance (MDR) to antibiotics.

Methods: Fecal samples of 27 residents of these institutions were collected (September-to-December, 2016). One gram of each sample was suspended in 10 mL of saline and 100 mL of the suspension was spread on MacConkey agar with ampicillin (100 mg/L)/cefotaxime (2 mg/L)/meropenem (1 mg/L). Susceptibility to antibiotics was determined by disk-diffusion methods, according to CLSI. ESBL-producers were detected by the double-disk-synergy-test and/or clavulanic-acid addition and PCR was performed for detection of blaTEM, blaOXA, blaSHV, blaCTX-M-group-1, blaCTX-M-group-2, blaCTX-M-group-8, blaCTX-M-group-9, blaCTX-M-group-25, tetA, tetB, aac(3)-II, sul1, aac(6)-Ib and qnrB genes.

Results: The study revealed 6 ESBL-producing Enterobacteriaceae colonizing 2 residents in LTCF (2-Escherichia coli/1-Klebsiella, Enterobacter, Serratia and Citrobacter (KESCgroup)) and 3 residents in NH (2-Escherichia coli/1-KESCgroup). Isolates showed positive for blaCTX-M-group-1, blaCTX-M-group-9, blaTEM, blaSHV, blaOXA, tetA, tetB, aac(3)-II, sul1 and aac(6)-Ib. These isolates showed resistance to non-beta-lactam antibiotics, namely to tetracycline, ciprofloxacin, trimethoprim-sulfamethoxazole, gentamicin and amikacin. We detected 6 MDR-bacteria isolates and 1 isolate with reduced susceptibility to carbapenems.

Conclusion: Our results show the dissemination of ESBL-producing-Enterobacteriaceae in intestinal colonization of LTCF/NH patients, who may act as vehicles of MDR-bacteria within the health-care-facilities and community.

Headache among medical students in Bukovina Region of Ukraine

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Aim: To study the prevalence of headache among medical students in Bukovina region of Ukraine.