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Emergence of Carbapenemase Escherichia Coli Isolates from the Little Egret (Egretta Garzetta) in Algeria

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Abstract : Background: Antimicrobial resistance is an urgent global health challenge in human and veterinary medicine, where migratory birds play a major role in the dissemination of multi-drug-resistant bacteria. The aim of this study was to screen for the presence of carbapenemase-producing Gram-negative bacteria (GNB) in the little egret (Egrettagarzetta) migratory bird stools in Algeria. Materials/Methods: In January 2014, 12 feacal samples were collected in Garaet El-Tarf, Oum El-Bouaghi city, Algeria. Samples were subjected to selective isolation of carbapenem-resistant GNB. Representative colonies were identified using the VITEK system. The obtained isolates were subjected to antibiotic susceptibility testing using the disc-diffusion method as well as carbapenemase production was verified by the modified Carba NP test. Results: In total, ten E. coli were obtained and were resistant to amoxicillin/clavulanic acid (100%), ertapenem (70%), cefoxitin (60%) cefotaxime (20%), cefepime (20%), ciprofloxacin (20%) and aztreonam (10%). The phenotypic detection results revealed that six out of the obtained strains were positive for the modified Carba NP test. Conclusion: The present study suggests that the little egret (Egretta garzetta) could be considered a reservoir of carbapenem-resistant Gram-negative bacteria.

Keywords : antimicrobial resistance, E. coli, Egretta garzetta, carbapenem resistance, dissemination
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