Identification and Antibiotic Resistance Rates of Acinetobacter baumannii Strains Isolated from the Respiratory Tract Samples, Obtained from the Different Intensive Care Units

Authors : Recep Kesli, Gulşah Asik, Cengiz Demir, Onur Turkyilmaz

Abstract : Objective: Acinetobacter baumannii (A. baumannii) can cause health-care associated infections, such as bacteremia, urinary tract and wound infections, endocarditis, meningitis, and pneumonia, particularly in intensive care unit patients. In this study, we aimed to evaluate A. baumannii production in sputum and bronchoalveolar lavage and susceptibilities for antibiotics in a 24 months period. Methods: Between October 2013 and September 2015, Acinetobacter baumannii isolated from respiratory tract speciments were evaluated retrospectively. The strains were isolated from the different intensive care units patients. A. baumannii strains were identified by both the conventional methods and aoutomated identification system -VITEK 2 (bio-Merieux, Marcy l'etoile, France). Antibiotic resistance testing was performed by Kirby-Bauer disc diffusion method according to CLSI criteria. Results: All the ninety isolates included in the study were from respiratory tract specimens. While of all the isolated 90 Acinetobacter baumannii strains were found to be resistant (100%), against ceftriaxone, ceftazidime, ciprofloxacin and piperacillin/ tazobactam, resistance rates against other tested antibiotics found as follows; meropenem 77, 86%, imipenem 75, 83%, trimethoprim-sulfamethoxazole (TMP-STX) 69, 76,6%, gentamicin 51, 56,6% and amikacin 48, 53,3%. Colistin was found as the most effective antibiotic against Acinetobacter baumannii, and there were not found any resistant (0%) strain against colistin. Conclusion: This study demonstrated that the no resistance was found in Acinetobacter baumannii against to colistin. High rates of resistance to carbapenems (imipenem and meropenem) and other tested antibiotics (ceftiaxone, ceftazidime, ciprofloxacine, piperacilline-tazobactam, TMP-STX gentamicin and amikacin) also have remarkable resistance rates. There was a significant relationship between demographic features of patients such as age, undergoing mechanical ventilation, length of hospital stay with resistance rates. High resistance rates against antibiotics require implementation of the infection control program and rational use of antibiotics. In the present study, while there were not found colistin resistance, panresistance were found against to ceftriaxone, ceftazidime, ciprofloxacin and piperacillin/ tazobactam.

Keywords : acinetobacter baumannii, antibiotic resistance, multi drug resistance, intensive care unit
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