عنوان مقاله:

Emergence of blaOXA-Carrying Carbapenem Resistance Acinetobacter baumannii in the Intensive Care Unit

محل انتشار:

بیستمین کنگره بین المللی میکروب شناسی ایران (سال: 1398)

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خلاصه مقاله:

Introduction and Objectives: Acinetobacter baumannii as a major human pathogen is associated with nosocomial infections especially in intensive care units (ICUs). Nowadays, increasing in the frequency of multiple drug-resistant (MDR) and (XDR) A. baumannii infections is an excessive dilemma in all part of the world. Carbapenems were highly efficacious antibiotics to eradicate A.baumannii strains. Unfortunately, a globally rise in carbapenem-resistant A. baumannii (CRAB) strains has been reported during the last 10 years. The production of oxacillinases is the main resistance mechanism among CRAB. A.baumannii strains are predominantly express Class D OXA-type enzymes such as the intrinsic OXA-51 enzyme, and the acquired OXA- 23, OXA-24, OXA-58. This study was aimed to detect the OXA-type genes among clinical strains of A. baumannii isolated from hospitalized patients in the north of Iran. Materials and methods: In a cross – sectional study during 6-month period in 2018, 700 samples were collected from ventilator, burn wound and bloodstream of hospitalized patients in ICUs of three hospitals in the north of Iran. All isolates were identified by conventional biochemical and microbiological tests and were confirmed by amplification of blaoxa- 51-like gene. Antibiotic susceptibility test was performed by Kirby-Bauer method and for Colistin and Imipenem, minimum inhibitory concentration (MIC) was determined by E-test. Plamid DNA of all A.baumannii isolates were extracted using plasmid extraction kit. Multiplex PCR was used for detecting of blaOXA-23-like, blaOXA-24-like and blaOXA-58-like genes. Results: Totally, 59 (8.4%) non duplicate A. baumannii isolates were obtained from collected samples. The majority of A. baumannii strains (42 strains) were isolated from ventilator (71.2%) followed by burn wounds (20.3%) and bloodstream (8.5%). The results of antibiotic susceptibility test revealed that all isolates were resistant to meropenem, cefepim, imipenem and ceftazidime. The least resistance rate was observed against Doxycyclin (42.4%). Also, MIC results showed that all clinical isolates of A. baumannii were susceptible to colistin but were resistant to imipenem. Among 59 clinical isolates of A. baumannii, bla-OXA-23 was the most prevalent bla-OXA gene (86.4%) followed by bla-OXA-24 (69.5%). None of clinical isolates harbored bla OXA-58 gene.Conclusion: In the present study, a high frequency of MDR A.baumannii isolates (76.3%) and XDR (23.7%) were detected which demonstrate a high distribution of carbapenemase-encoding genes and high resistance to cephalospori ...

کلمات کلیدی:

Acinetobacter baumannii, nosocomial infections, Antibiotic susceptibility, Oxacillinases