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ePoster Viewing
MDR Enterobacteriaceae - a major threat

WHICH PATIENTS DEVELOP BLOODSTREAM INFECTION DUE TO KPC-PRODUCING KLEBSIELLA PNEUMONIAE WITHIN TWO DAYS FROM RECTAL COLONIZATION?

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Objectives: KPC-producing *Klebsiella pneumoniae* (KPC-Kp) provokes serious infections especially in previously colonized critically ill patients. The aim of the study was to identify risk factors for the development of KPC-Kp bacteremia within two days after rectal colonization of Intensive Care Unit (ICU) hospitalized patients.
Methods: During a 2-year period, KPC-Kp isolates, from bacteremic ICU patients (one per patient), at a University Hospital, were studied. Rectal samples were taken also, upon admission in ICU and weekly afterwards and were inoculated in chromogenic agar for the detection of KPC-Kp colonization. Antibiotic susceptibility test was performed by the agar disk diffusion method according to CLSI guidelines. MIC was determined by the Etest (AB Biodisk). Isolates were tested by meropenem-boronic acid synergy disk test for KPC detection. The presence of bla_{KPC} gene was confirmed by PCR. Molecular typing was performed by PFGE of *Xba*I restricted genomic DNA. Epidemiologic data were collected from the ICU computerized database and patient?s chart reviews. Statistical analysis was performed with SPSS ver. 19.0, as appropriate.
Results: From 173 ICU patients who developed KPC-Kp rectal colonization during ICU stay, 48 (28%) developed KPC-Kp bacteremia. Among them, 30 patients (63%) developed the bloodstream infection within two days from the rectal colonization. All bacteremic KPC-Kp isolates (100%) were resistant to all antibiotics (carbapenems included), 28 (52.8%) were resistant to gentamicin, 29 (54.7%) to colistin and 18 (34%) to tigecycline. blaKPC-2 gene was found in all KPC-Kp isolates while the majority belonged to pulsotype A (n=34, 64.2%). Multivariate analysis identified tracheostomy (*P*=0.001), number of invasive catheters (*P*=0.034), colonization during the first seven days (*P*=0.013), mechanical ventilation upon colonization day (*P*=0.013), and resistance of the colonizing KPC-Kp isolate to colistin (*P*=0.002) as risk factors of KPC-Kp bacteremia immediately after enteric colonization.
Conclusions: There was a high percentage of KPC-Kp bacteremia in previously colonized ICU patients. The evolution from colonization to infection was affected by the presence of invasive devices, and the resistance of the colonizing isolates to colistin. Furthermore, patients colonized during the first seven days of ICU stay were more likely to develop bacteremia within two days.