

**P2454 Risk factors for multidrug-resistant Gram-negative bacteraemia in an endemic hospital environment in Greece**

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**Background:** Nosocomial bloodstream infections (BSI) caused by Gram-negative bacteria have particular importance among hospital acquired infections (HAIs). However, the surveillance system for HAIs in Greece is deficient. In addition, prevalence of Gram-negative multidrug resistant (MDR) species is considerably high.

**Materials/methods:** We prospectively studied all episodes of nosocomial bacteremia attributed to Gram-negative bacteria during a six months' period (1/03-31/8/2018) in a 1000-bed, tertiary teaching hospital. Nosocomial bacteremia was defined according to ECDC surveillance definitions. Demographical, clinical and microbiological data were collected in all patients with at least one episode of nosocomial BSI during the study period. MDR Gram-negative was defined as acquired non-susceptibility to at least one agent in three or more antimicrobial categories.

**Results:** A total of 132 episodes of nosocomial BSI occurred during the study period in 84 patients (age  $63.4 \pm 14.6$  years). MDR bacteremia occurred later ( $25.3 \pm 19.2$  vs.  $12.1 \pm 11.6$  days, respectively;  $p < 0.001$ ). Patients with MDR had a longer duration of central venous catheter (CVC) than patients with non-MDR BSI and urinary catheter placement, of hospitalization and of treatment with meropenem. Patients with MDR also tended to be younger and to have a longer duration of intubation. Cases of MDR BSIs were more frequently isolated from intensive care units, from patients who were intubated, obese, smokers, bedridden, with a CVC or a urinary catheter, who had received piperacillin/tazobactam, tigecycline or colistin and who did not have an ischemic stroke and did not live in a healthcare facility. In binary logistic regression analysis, independent risk factors for MDR were obesity (relative risk (RR) 3.95, 95% confidence interval (CI) 1.33-11.71,  $p < 0.01$ ), and invasive mechanical ventilation (RR 4.34, 95% CI 1.87-10.07,  $p < 0.001$ ). Among cases in which colonization was evaluated ( $n=89$ ), independent risk factors for MDR were invasive mechanical ventilation (RR 6.62, 95% CI 1.51-29.01,  $p < 0.05$ ) and colonization (RR 3.31, 95% CI 1.08-10.18,  $p < 0.05$ ). Interestingly, patients with MDR were less likely to die than patients with non-MDR BSI (26.5 vs. 46.7%,  $p < 0.05$ ).

**Conclusions:** Awareness of risk factors associated with gram-negative BSI may be used to prioritize infection control practices and prognostic evaluations. Identification of resistance patterns and organisms prevailing locally is important.

