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### Nosocomial bloodstream infections : a 5-year analysis in a Tunisian hospital with high antimicrobial drug-resistance prevalence

Basma Mnif<sup>\*1</sup>, Nour Ben Ayed<sup>1</sup>, Faouzia Rhimi<sup>1</sup>, Adnene Hammami<sup>2</sup>

<sup>1</sup>Laboratory of Microbiology; Habib Bourguiba University Hospital

<sup>2</sup>Habib Bourguiba University Hospital; Faculty of Medicine Sfax; Microbiology

**Background:** Nosocomial bloodstream infections (NBSIs) are important causes of morbidity and mortality in Tunisia. The increase of antimicrobial drug resistance makes its treatment increasingly challenging. This study aimed to analyze the epidemiology, microbiology, and the incidence of NBSI in Habib Bourguiba University hospital, a multidrug resistant setting, between 2010 and 2014.

**Material/methods:** patients with a confirmed NBSI within the period 2010-2014 were retrospectively analyzed. NBSI was diagnosed when a pathogen was isolated from a blood sample obtained after the first 48 h of hospitalization. The incidence of NBSIs was calculated per 1000 patient-days. Patients' demographic, clinical, and microbiological data were recorded and analyzed using SPSS 20.

**Results:** Between 2010 and 2014, a total of 1005 NBSI were identified in 827 patients, of which 101 were polymicrobial. The incidence of NBSI was 1.4 BSI/1000 bed-days. NBSI incidence was significantly higher in the ICUs (11,8/1000 patient-days) than in surgical wards (<0,5/1000 patient-days). The mean interval between admission and infection was 15.6 days. 1113 isolates were recovered from bloodcultures. Gram-negative bacteria predominated (75.7 %). The commonest bacteria were *Klebsiella pneumoniae* (20.7 %), *Acinetobacter baumannii* (12.8 %), *Staphylococcus aureus* (12.5 %), *Pseudomonas aeruginosa* (10.3 %), *Enterococcus* spp (8.1 %) and *E. coli* (5.4%). The source of BSI was documented in only 28% of cases.

Carbapenem resistance was found in 94 % of *A. baumannii*, in 33 % of *P. aeruginosa*, and in 9,1 % (2010) to 47,6 % (2014) of *K. pneumoniae* isolates ( $p < 0.05$ ). 51% of *Staphylococcus aureus* isolates were methicillin-resistant and 15,6% of *Enterococcus* isolates were resistant to vancomycin. The incidence of multidrug-resistant bacteria NBSIs was 0.74 BSI/1000 patient-days and increased significantly for carbapenemase-producing Enterobacteriaceae from 0.05 (2010) to 0.17 (2014) BSI/1000 patient-days.

**Conclusions:** This study showed significant increase in incidence of NBSIs in our setting. Moreover, we found that the proportion of NBSIs due to antibiotic-resistant organisms is increasing in Tunisia.