

**914. A Single-Center 10-Year Analysis of Neurosurgical Patients with Nosocomial Bloodstream Infections: Incidence, Resistance Rates and Risk Factors for Mortality**

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**Background.** In neurosurgery, there is limited data on the antibiotic resistance and prognosis following nosocomial bloodstream infection (NBSI). The aim of this study was to record incidence, antimicrobial resistance rates and risk factors for death in neurosurgical patients with NBSI.

**Methods.** Patients with a confirmed NBSI within the period 2003-2012 that were hospitalized in a neurosurgery department with a 4-bed intermediate care unit (IMCU) were included. NBSI was diagnosed when a blood sample obtained after the first 48 hours of hospitalization isolated a healthcare-associated pathogen. Blood cultures were performed with the BacTAlert automated system. Vitek 2 system was

used for identification and antibiotic susceptibility. Risk factors for mortality were also assessed.

**Results.** A total of 236 patients with NBSI were identified. Blood samples recovered 378 isolates. Gram-negative bacteria (GNB) were the commonest isolates (54.5%). The predominant GNB pathogens were: *Klebsiella pneumoniae* (KP, 28.2%), *Pseudomonas aeruginosa* (PA, 27.1%) and *Acinetobacter baumannii* (AB, 24.3%). The commonest Gram positive bacteria (GPB) were *Staphylococcus epidermidis* (SE, 36.6%) and *Enterococcus* spp. (ES, 29.2%). Antibiotic resistance was high with 60% of KP and 70% of PA isolates resistant to gentamicin. Imipenem resistance was found in 90% of AB, 66% of PA and in KP isolates and it increased from 22% during 2003-2007 to 77% during 2008-2012 ( $p < 0.001$ ). All GNB were sensitive to colistin. Of the coagulase negative staphylococci isolates, 94% were resistant to oxacillin. All GPB isolates were sensitive to vancomycin. Incidence of NBSI had a median of 4.2 infections/1,000 bed-days. Overall mortality was high (50.4%). Age, head injury, intracranial hemorrhage, surgery, GPB and GNB NBSI, central venous catheter use, stay in ICU, and stay in IMCU were associated with in-hospital death ( $p < 0.05$ ). In multivariable analysis, age and stay in IMCU were independent risk factors for in-hospital mortality ( $p < 0.05$ ).

**Conclusion.** High incidence of NBSI and increased mortality was noted in neurosurgical patients. A predominance of multidrug resistant GNB was found limiting the antibacterial drugs available for treatment.

**Disclosures.** All authors: No reported disclosures.