

R 2391 Bacterial Pathogens Isolated from Patients with Blood Stream Infection

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Objectives: To determine the frequency of pathogens isolated from 1483 patients with Blood Stream Infections (BSI) and to investigate their resistance patterns, between January 2005 and July 2007, in “Dr. V. Babes” Hospital of Infectious and Tropical Diseases, Bucharest.

Methods: Blood cultures were performed using the BacT/ALERT 120 automated system. ATB/Expression and Vitek 2 Compact automated system (bioMerieux, France) was used for identification and resistance testing of pathogens, according to NCCLS 2005-CLSI 2007. Using *S. aureus* ATCC 25923, *S. pneumoniae* ATCC 49619, *E. coli* ATCC 25922 and *P. aeruginosa* ATCC 27853 provided internal quality control.

Results: A total of 3561 blood cultures were screened for aerobic and anaerobic bacteria. Bacteraemia occurred in 176 cases (4.9%). Out of 176 isolated strains, 107 were Gram-positive (60.8%) and 69 were Gram-negative (39.2%). Among Gram-positive, the most prevalent was coagulase-negative *Staphylococci* 34.6%, followed by *Staphylococcus aureus* 26.2%, *Streptococcus pneumoniae* 14.0%, *Enterococcus spp* 4.7%. The most frequent of streptococci were *Streptococcus pyogenes* and *Streptococcus bovis* (3.7% each). Among the Gram-negative *Escherichia coli* was 47.8%, *Klebsiella pneumoniae* 15.9%, *Salmonella spp* 13.0%. In lower rates we found: other *Enterobacteriaceae*, *Acinetobacter baumannii*, *Pseudomonas aeruginosa*, *Neisseria meningitidis*, *Haemophilus influenzae* and anaerobic bacteria. All Gram-positive isolates were susceptible to glycopeptides. 20/37 of CoNS were MRSCN, 13/37 resistant to fluoroquinolone, 12/37 to gentamicin. 9/28 of *Staphylococcus aureus* were MRSA, 4/28 were resistant to aminoglycosides, 5/28 to fluoroquinolones. In *S. pneumoniae* isolates, 1/15 was reported with high-level resistance to penicillin. *E. coli* and *K. pneumoniae* strains produced ESBL in 12.1% and 45.4% respectively. Most of *A. baumannii* and *P. aeruginosa* strains were susceptible to carbapenems.

Conclusions: 1. CoNS (21.0%) were the leading cause of BSI, followed by *E. coli* (18.7%), *S. aureus* (15.9%), *S. pneumoniae* (8.5%). 2. All Gram-positive isolates were susceptible to glycopeptides. 3. 45.4% *K. pneumoniae* was ESBL positive. 4. Carbapenems had a good activity against Gram-negative bacilli.

Keywords: bacteraemia, resistance patterns, ESBL.