PATHOGEN DISTRIBUTION AND FREQUENCY OF MULTIDRUG RESISTANT PATHOGENS IN CENTRAL LINE-ASSOCIATED BLOODSTREAM INFECTIONS

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AIM

According to the existing data, most bloodstream infections in catheters originate from the skin, with Staphylococci being the most common cause of catheter-related infections. We describe the pathogen distribution and the frequency of multidrug resistant pathogens (MDR) pathogens in central line-associated bloodstream infections (CLABSI) occurred in all of our hospital units during a 2-year period (2014-2015).

METHODS:

Identification of isolates and antimicrobial resistance patterns were determined by the VITEK-2 compact system. E-test was performed for confirmation purposes. CLABSI was defined using CDC criteria.

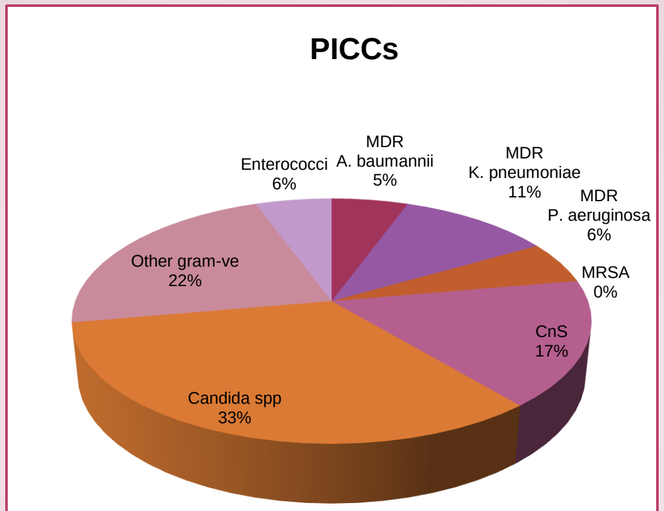

Chart 1. Distribution profile of CLABSI isolates in PICCs

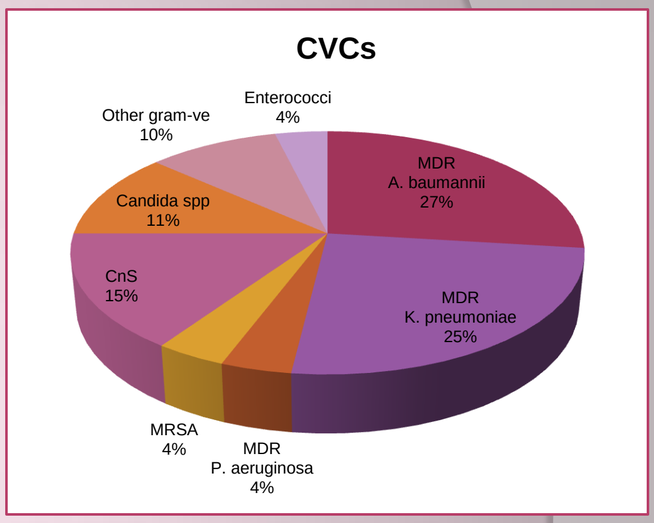

Chart 2. Distribution profile of CLABSI isolates in CVCs

RESULTS

Active surveillance of CLABSIs was performed in all units at our institution during the2-year period. In total 70 CLABSIs were determined, 18 from PICCs and the 52 CVCs. The distribution of the isolated micro-organisms in CVCs was 34/52(65.3%) Gram-negatives, 12/52 (23%) Gram-positives and 6/52 (11.5%) fungi. The three most frequently isolated pathogens were *Klebsiella pneumoniae* (15/52, 28.8%), *Acinetobacter baumanii spp.* (15/52, 28.8%), *Staphylococci* coagulase negative (11/52, 21.15%). The distribution of the isolated microorganisms in PICCs was 8/18 (44.4%%) for Gram-negatives, 4/18 (22.4%) for Gram-positives and 6/18(33.3%) for fungi. The most frequently isolated pathogens were *Candida sp.* (6/18, 33.3%), *Staphylococci* coagulase negative (3/18 16.6%). Overall, 33/70, (47.1%) of CLABSI isolates were multidrug resistant (MDR), 15/70 (21.4%) *Acinetobacter baumanii spp.*, 15/70 (21.4%) *Klebsiella pneumonia* and 3/70 (4.2%) *Pseudomonas aeruginosa.*

CONCLUSIONS

Apart from *Staphylococcus* coagulase negative, multidrug resistant organisms Gram-negative bacteria are also frequent pathogens in CLABSIs from Greek hospitals. For countries such as Greece, where MDR organisms are frequently sporadic or even endemic in hospitals, apart from skin pathogens, these pathogens should also be targeted when treating CLABSIs. In addition, close attention should be paid to their prevention through antimicrobial stewardship, hand hygiene adherence, attention to environmental decontamination and enhanced local and national microbiological surveillance.

References:
Centre for Disease Control *NHSN Device-associated Module:* CLABSI, http://www.cdc.gov/nhsn/PDFs/pscManual/4PSC_CLABScurrent.pdf