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P2434 Eleven-year cohort of bloodstream infections in 552 febrile neutropenic patients: resistance profiles of Gram-negative bacteria as a predictor of mortality

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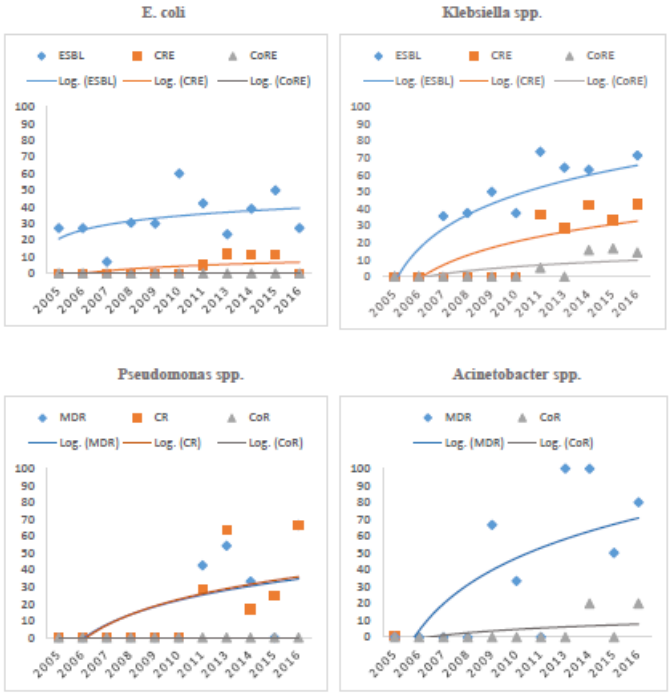
Background: Antimicrobial stewardship is of major importance in cases with febrile neutropenia. Close monitoring of resistance rates and patterns is required for accurate antimicrobial treatment strategy. We aimed to investigate the trends in resistance and the relationship with mortality rates.

Patients and Methods: The single center surveillance data of inpatient cases with hematological malignancies who developed febrile neutropenia (FN) and diagnosed as microbiologically confirmed bloodstream infections (BSIs) between 2006 and 2016 were reviewed retrospectively.

Results: A total of 950 episodes in 552 patients with BSIs were analysed. Of the patients; 55,9% were male, median age was 43 years and 35,6% had acute myeloid leukemia. In total, 1016 separate microorganisms were isolated from blood cultures. Gram negative bacteriae, Gram positive bacteriae, fungal and polymicrobial agents accounted for 42,3% (n=402), 48,4% (n=460), 2,7% (n=26) and 6,5% (n=62) of the BSI episodes respectively. The 7-day and 30-day mortality rates were 12 and 17,7%, respectively. In-hospital overall mortality rates were 12%, 21,5%, 34,6% and 29% in BSI due to Gram-positive, Gram-negative bacterial, fungal and polymicrobial etiology respectively. The varying types of microorganisms were related to the varying outcomes (p=0.001). Thirty-day mortality rates were significantly higher among Gram negatives with various types of resistance patterns including extended spectrum beta lactamase (ESBL) (p=0.001), carbapenem resistance (p<0.001) and colistin resistance(p<0.001). Percentages of the resistance pattens in Gram negatives by years are demonstrated in Figure 1. Thirty-day mortality was not significantly associated with presence of resistance in cases with Gram positive etiology. Catheter-related BSIs constituted 48,7% (n=463) of total episodes, and the mortality was significantly lower (p<0.002) in this group.

Conclusions: The tremendous rise in multi-drug resistance rates among Gram negatives is dreadfully related to increasing mortality and leads to sharp shifts in empirical treatment. Antimicrobial stewardship in cases with FN requires vigilance and tailoring of treatment upon local surveillance data.

Figure 1. Percentages of resistance patterns in gram negatives, isolated from BSIs



ESBL: Extended-spectrum beta-lactamase, CRE: Carbapenem-resistant Enterobacteriaceae,

CoRE: Colistin-resistant Enterobacteriaceae, MDR: Multidrug Resistance, CR: Carbapenem-resistant, CoR: Colistin-resistant