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Abstract (publication only)

Clinical and bacteriological characteristics and risk factors for mortality in haematological patients with neutropenic fever

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Background: Febrile neutropenia (FN) is an urgent condition. The increasing rates of resistance among both gram-positive and negative pathogens isolated from neutropenic patients are posing challenges regarding empirical antimicrobial treatment. The objective of the study was to identify risk factors and the outcome of infections occurring in neutropenic patient. Methods: We report a case series of patients cared for at the University Hospital oh Heraklion, Crete, Greece, from January 2009 through August 2012. A standard questionnaire was used for data collection. Results: In total, 153 episodes of FN in 99 patients (60 males;61%) with median age of 69 years (range 21-93) were identified. Most patients had acute myelogenous leukemia (55;36%), followed by non-Hodgkin's lymphoma (25;16%), myelodysplastic syndrome (22;14%), chronic lymphocytic leukemia (;19%), multiple myeloma (12;23%) and chronic myelogenous leukemia (14;9%). The median length of hospital stay was 17 days (range 2-87). The most frequent infections were those of the respiratory and urinary tract [21 episodes (25%) each], followed by primary bacteremia [20 (24%)] and catheter related bacteremia [9 (11%)]. The responsible microorganisms were identified in 83 (54%) of the episodes. Among 181 pathogens identified, the most frequent were Gram negatives responsible for 111 (61%), Gram positives for 52 (29%), and fungi for 18 (10%) episodes. In 43 episodes (52%) the infection was polymicrobial. Among gram negatives, E. coli (30; 17%), P. aeruginosa (29;16%), and K. pneumoniae (29;16%) predominated. From the isolated bacteria 46 (25%) were multidrug resistant (MDR), 30 (17%) extensively drug-resistant and 2(1%) pandrug-resistant. Initial empirical antimicrobial treatment was considered inappropriate based on susceptibility test results in 42 episodes (51%). Mortality reached 12.4%. Predicting factors of mortality were, MASC score (inverse correlation p=0.001), length of hospitalization (p<0.0001) and colistin treatment (p<0.0001). Conclusion: Infections in neutropenic patients with hematological malignancies are associated with considerable mortality due to polymicrobial nature, frequent isolation of MDR organisms and high rate of inappropriate initial empirical antimicrobial treatment.