Two-year antimicrobial resistance patterns of bacteria isolated from peritoneal fluid, pleural fluid and synovial fluid at Imam Reza Hospital, Mashhad

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ABSTRACT

Introduction: Infections of the sterile body sites typically have greater clinical urgency and these infections could be life-threatening. This study was done for identifying the bacterial pathogens and their antimicrobial susceptibility pattern in the patients admitted in Imam Reza Hospital, Mashhad.

Materials and Methods: This study was done on a retrospective analysis for a period of two years from January 2015 to December 2017. Demographic data and clinical information such as gender, admission date, specimen type, specimen collection date and antimicrobial susceptibility test result were obtained from the microbiology laboratory database and administrative record system. Antimicrobial susceptibility was performed on all isolated bacteria by Kirby Bauer's disc diffusion method. Interpretation was based on Clinical Laboratory Standard Institute (CLSI, 2015) criteria. Also, the minimum inhibitory concentration (MIC) was determined for vancomycin by MIC test strips.

Results: A total 1554 different body fluid were collected from suspected patients, which included pleural fluid, peritoneal fluid, synovial fluid and pericardial fluid. In this study, 649 fluids samples showed growth of organisms with an isolation rate of 41.8%. Most frequent bacteria in peritoneal fluid was E. Coli (19.8%) and Enterococcus (14.9%). In pleural fluid most frequent bacteria was Acinetobacter (24.7%) and Enterococcus (11.5%). Also, most frequent bacteria in pericardial fluid was Staphylococcus aureus (41.5%). Among different isolates, 88.1% were resistance to Ceftriaxone. This followed by Cefotaxime (83.6%), Ceftazidime (66.5%) and Cefepime (66.2%).

Conclusion: The present findings can serve as an index of actual antibiotic resistance specifically in sterile body fluids. Knowledge of bacteriological and antimicrobial profile of sterile body fluids is important so that such life threatening infections can be treated effectively on an urgent basis.