Microbiological spectrum and susceptibility patterns of pathogens causing bacteraemia in neutropenic febrile children with cancer

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Background*:*Neutropenia is a post chemotherapy complication in pediatric patients with cancer. Bacteremia is the most prevalent form of documented infection in these patients. Microbiological pattern of microorganisms causing bacteremia can be different from a medical center to another. Because in Iran comprehensive studies about bacteremia and its susceptibility patterns in febrile neutropenia pediatric cancer patients yet to be done, we decided to study microbiological spectrum and susceptibility patterns of pathogens causing bacteremia in neutropenic febrile children with cancer.

Methods:We studied 96 pediatric cancer patients with febrile neutropenia from October 2007 to October 2011 on the accounts of isolated bacteria and its susceptibility pattern.

Results*:* Mean age of patients was 4.96±3.08. 50 cases (52.1%) were females. Over 60.4 patients had an underlying hematological malignancy with ALL accounting for 35.4%, AML 15.6% & 10.4 of cases. Gram-positive organismswere isolated in 67.7% of blood cultures and gram-negative organisms in 32.3%. Coagulase-negative Staphylococci (28.1%), Staphylococcus aureus (24%)& Klebsiella pneumoniae (9.4%) were the most common isolated organisms. Susceptibility rate of Gram-negative organisms to Ampicillin, Gentamicin, Ceftriaxone, Ceftazidime, Amikacin, Imipenem and Ciprofloxacin were61.5%, 66.7%, 37.9%, 16%, 61.5%, 85.2% and 93.3% respectively. 88% of Coagulase-negative Staphylococci and 77.3% of Staphylococci aureus were Oxacillin resistant. All Streptococci pneumoniae and Streptococci viridans were Penicillin resistant and 50% of Streptococci non-group A, B or D were Penicillin resistant.

Conclusion*:* Most of the bacterial resistance were against older antibiotics. High resistance rate in most of the organisms especially Coagulase-negative Staphylococci and Staphylococci aureus is awarning sign to use new antibiotic more cautiously in empiric and prophylactic treatments.

Key *words*: Bacteremia, Pediatric, Fever, Neutropenia, Malignancy