

## Trends in the Incidence of Bloodstream Infections in Patients with Hematological Malignancies in the Period 1991-2012

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**Abstract :** Objective: Blood stream infections (BSI) are severe, life-threatening illness for immuno compromised patients with hematological malignancies. We report the trend in blood-stream infections in this group of patients in the period 1991-2013. Methods: A total of 4742 blood samples investigated. All blood cultures were incubated in a continuous monitoring system for 7 days before discarding negative. On signaled positive, organism was identified by conventional methods. The Real-time polymerase chain reaction (PCR) was used for the indication of human herpes virus 6 (HHV-6), Cytomegalovirus (CMV) and Epstein-Barr virus (EBV). Results: Between 1991 and 2001 the incidence of Gram-positive bacteria (Staphylococcus epidermidis, Staphylococcus aureus) being the most common germs isolated (70,9%) were as Gram-negative rods (Escherichia coli, Klebsiella spp., Pseudomonas spp.) – 29,1%. In next decade 2002-2012 the number of Gram-negative bacteria was increased up to 40.2%. It is shown that the incidence of bacteremia was significantly more frequent at the background of detectable Cytomegalovirus and Epstein-Barr virus-specific DNA in blood. Over recent years, an increased frequency of micro mycetes was registered in blood of the patients with hematological malignancies (Candida spp. was predominant). Conclusion: Accurate and timely detection of BSI is important in determining appropriate treatment of infectious complications in patients with hematological malignancies. The isolation of Staphylococcus epidermidis from blood cultures remains a clinical dilemma for physicians and microbiologists. But in many cases this agent is of the clinical significance in immunocompromised patients with hematological malignancies. The role of CMV and EBV in development of bacteremia was demonstrated.

**Keywords :** infectious complications, blood stream infections, bacteremia, hemoblastosis

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