Bacterial pathogens isolated from blood cultures and antibiotic susceptibility rates: Two years retrospective study

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Introduction: Bloodstream infections are one of the major problems resulting with high morbidity and mortality. In this study, blood cultures evaluated in our medical microbiology laboratory between January 2013 and December 2014 have been included.

Methods: Totally 2680 blood cultures were positive. For culture, BacT-ALERT 3D Culture System and for identification and antimicrobial susceptibility testing; conventional methods, automated microbiological systems and Kirby-Bauer disc diffusion test were applied according to Clinical and Laboratory Standards Institute (CLSI) criteria.

Results: Totally 2680 strains were isolated and among all these 223(8.32%) were contaminant. 860(32.09%) of the strains were gram negative, 1820(67.91%) were gram positive. Coagulase negative Staphylococci (CNS) had the highest isolation rate (53.66%, n=1438) and following CNS, E.coli (11.34%, n=304), Enterococcus spp. (7.72%, n=207), Klebsiella spp. (6.34%, n=170), Acinetobacter spp. (5.97%, n=160), Staphylococcus aureus (3.32%, n=89) and Pseudomonas aeruginosa (3.13%, n=84) were isolated, respectively. CNS were methicillin resistant with the rate of 64.18% (n=923) but among S. aureus it was 33.71% (n=30). Carbapenem resistance for Acinetobacter spp. was 88.75% (n=142), for Pseudomonas spp. it was 19.05% (n=16) and for Enterobacteriaceae family it was 7.19% (n=40). Vancomycin resistant Enterococci (VRE) 6.28% (n=13) among all isolated Enterococcus spp.

Conclusions: Even though CNS isolation rates are predominantly high, differentiation between actual pathogen and contaminant strains was problematic and the 8.32% rate of contamination can be reduced by proper culture collecting. Even with excluding contaminants, CNS was still the top pathogenic agent. Carbapenem resistance is an emerging problem especially for long-term hospitalization settings such as intensive care units.

Biography
Ali Korhan Sig is a Medical Doctor since 2009 and has been learning Microbiology in Gulhane Military Medical Academy (GATA) since 2012. He is a Member of KLIMUD (Clinical Microbiology and Expertise Association in Turkey) and Turkish Microbiology Community (TMC). He is also studying on Mycobacterium tuberculosis and mycobacteria other than tuberculosis.

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