TITLE: IDENTIFICATION AND ANTIMICROBIAL SUSCEPTIBILITY TEST FROM POSITIVE BOTTLE CULTURE FOR RAPID DIAGNOSIS OF BLOODSTREAM INFECTION.

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Abstract

Blood stream infections (BSI) are very serious and potentially lethal being evaluated as the third cause of death listed to the Health Assistance (IrAS). The adequate antimicrobial therapy is essential to avoid the evolution of BSI to sepsis or septic shock and the rapid identification of the etiological agent effectively contributes to the early administration of it. The aim of this study was to evaluate the identification and the antimicrobial susceptibility using bacteria obtained directly from the blood culture broth. A qualitative prospective study was conducted with 67 patients admitted at a University Hospital in Curitiba – PR between June and November 2015, in which the blood culture samples contained only one microorganism. The methodology presented was constituted by the identification and the antimicrobial susceptibility test directly from the blood culture bottle through the formation of a bacterial pellet and its inoculation for automated detection at the VITEK2® (BioMérieux) equipment. The obtained results were compared with a standard methodology (identification and susceptibility test from subculture) and is has been calculated the percentage of errors in the identification and susceptibility in each antimicrobial. The evaluated methodology gave the results approximately 18 hours faster than the standard one. Among the 29 evaluated samples with gram positive cocci, 16 (55.2%) presented an agreement by both methodologies. Of these isolated 12 (75%) presented a complete agreement in the susceptibility tests between the methodologies for all 11 antimicrobials tested. In 4 (25%) samples were observed at least a discrepancy in antimicrobial susceptibility profile. A total of 37 samples have been evaluated for the Gram-negative bacilli, which presented 100% of agreement in the identification by both methodologies. In the susceptibility tests, 23 (62.1%) of the isolated presented agreement between the tested methodology and the standard methodology in for all 12 antimicrobial tested. In the 14 isolated remaining there were disagreements in one or more antimicrobials tested. The results obtained showed that the utilization of the blood culture broth for the automated identification and susceptibility test of the Gram-negative bacteria presented a good correlation with the standard methodology and faster results. More studies are required for the Gram-positive bacteria.

Key-words: Blood Culture, bloodstream infection