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Abstract (poster session)

Evaluation of the QuickFISH BC test, a rapid method to distinguish Staphylococcus aureus from coagulase - negative staphylococci in positive blood cultures

E. Carretto*, M. Mirra, M. Bardaro, S. Ferretti, C. Zuelli (Reggio Emilia, IT)

Objective: the reduction of turn around time (TAT) for blood cultures is a major goal in clinical microbiology. Recently, a "peptide nucleic acid fluorescence in situ hybridisation test" (PNA-FISH, AdvanDX) has become available in clinical practice, allowing the identification of some microorganisms directly from positive blood culture bottles in 90 minutes. A modification of this technique (Staphylococcus QuickFISH BC, AdvanDX) is currently under evaluation: it allows the distinction between Staphylococcus aureus (SA) and coagulase negative staphylococci (CNS) with a 20 minutes procedure. Aim of this study was to evaluate the performance of this test on different sets of blood cultures positive for Gram-positive cocci in clusters. Methods: the blood cultures were analyzed using the Bactec system (Becton Dickinson, USA). The samples showing Gram positive cocci in clusters were examined using the Staphylococcus QuickFISH BC, performed according to the manufacturer procedure, and the coagulase tube test. Quick-FISH BC slides were read independently by different test operators and blinded to the final results with traditional techniques. The identification of the microorganisms grown from cultures were performed using Vitek2 (BioMerieux, France). Results: 59 blood cultures of 44 different patients were analyzed. 60 staphylococcal isolates were identified (one bottle yielded two different strains). In particular 23 S. epidermidis, 21 S. aureus, 7 S. hominis, 4 S. capitis, 3 S. haemolyticus, 1 S. warneri were identified by Vitek2; 1 coagulase negative strain was not identified at species level. The direct coagulase tube test was negative, after incubation at 36°C, both after 4 hours and after 24 hours for all the CNS. Among the 21 S. aureus, 18 were positive after 4 h incubation, 2 were negative after 4h but positive after 24h, one strain was still negative after 24h. There was no discrepancies between the QuickFISH test results and the phenotypic identification. Conclusion: this study demonstrates the excellent agreement between QuickFISH test and standard laboratory techniques in identifying staphylococcal strains from positive blood cultures. Although the direct coagulase tube test is cheaper, QuickFISH BC appears quick, reliable and easy to perform. For its reduced time of analysis, this test can be performed also in the late afternoon, when direct coagulase tube test is useless. This is very important for patient with Staphylococcus aureus bacteremias.