



We aimed to discuss the wide array of phenotypic methods that have recently been developed to substantially reduce the time to result from identification to antibiotic susceptibility testing (AST)” Dubourg et al (2018).

Abstract:

Background: Administration of appropriate antimicrobial therapy is one of the key factors in surviving bloodstream infections. Blood culture (BC) is currently the gold standard for diagnosis, but conventional practices have long turnaround times while diagnosis need to be faster to improve patient care. Phenotypic methods offer an advantage over genotypic methods in that they can identify a wide range of taxa, detect the resistance currently expressed, and resist genetic variability in resistance detection.

Aims: We aimed to discuss the wide array of phenotypic methods that have recently been developed to substantially reduce the time to result from identification to antibiotic susceptibility testing (AST).

Sources: literature review focusing on rapid phenotypic methods for improving the diagnosis of bloodstream infection.

Content: Rapid phenotypic bacterial identification corresponds to Matrix-assisted laser-desorption/ionization time of flight mass spectrometry (MALDI-TOF), and rapid antimicrobial

susceptibility testing methods comprised of numerous different approaches, are considered and critically assessed. Particular attention is also paid to emerging technologies knocking at the door of routine microbiology laboratories. Finally, workflow integration of these methods is considered.

Implications: The broad panel of phenotypic methods currently available enables healthcare institutions to draw up their own individual approach to improve bloodstream infection diagnosis but requires a thorough evaluation of their workflow integration. Clinical microbiology will likely move towards faster methods while maintaining a complex multi-method approach as there is no all-in-one method.

Reference:

Dubourg, G., Lamy, B. and Ruimy, R. (2018) Rapid Phenotypic methods to improve the diagnosis of bacterial bloodstream infections: meeting the challenge to reduce the time to result. *Clinical Microbiology and Infection*. March 29th. .

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