Performance of the Accelerate Pheno™ system for Early identification and antimicrobial susceptibility testing for Sepsis diagnosis from positive blood cultures. (First Evaluation from Middle East)

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Objectives: To evaluate the performance of the Accelerate Pheno™ system for the early identification and antimicrobial susceptibility testing (AST) of a panel of Gram-negative bacilli (GNB) with different resistance profiles (e.g. penicillinases, ESBLs, cephalosporinase overproduction, carbapenemases, impermeability) directly from positive blood cultures in <7 h.

Methods: A panel of 46 positive blood culture bottles (15 Gram positive, 30 Gram negative and one off panel organism) from clinical samples, that was positive using BacT-Alert system (bioMérieux, France), where tested parallel using the Accelerate Pheno™ system. Positive blood cultures were subjected to parallel testing using the Accelerate Pheno™ system and conventional culture methods [identification of isolated colonies by MALDI-TOF and VITEK® 2 system (bioMérieux, France), and AST by disc diffusion and Etest following CLSI recommendations.

Results: The overall identification agreement between the Accelerate Pheno™ system and conventional culture methods was 95.3% (41/43) Sensitivity 99.8% (649/650) specificity. The overall categorical agreement between the system and culture-based AST was 91.4% (41/43), with rates for minor errors of 6.6% (16/244) major errors 2% (3/151) and very major errors 2.4% (2/83). The Accelerate Pheno™ system produced AST results more faster than conventional method by 40 hrs.

The Accelerate Pheno™ system has 90 mins Time -To-Report for identification and 7 hrs Time-to-Reprt AST.

Conclusions: The Accelerate Pheno™ system is an accurate, sensitive and easy-to-use test for the rapid identification and AST for MDR GNB and GPB in bloodstream infections. Given the burden of multidrug resistance, its implementation in the microbiology laboratory could be a useful tool for prompt and early management of sepsis.

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Achieving the United Nations AIDS (UNAIDS) 90-90-90 Target; A Single Center Experience

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Background: In 2014, the United Nations AIDS (UNAIDS) program launched the "90-90-90 target" to be achieved by 2020, the first target is that 90% of all people living with HIV will know their status, target two is 90% of those diagnosed will be on antiretroviral therapy (ART), and the final target was 90% of those on ART achieve viral suppression.

Aim: The aim of this study was to analyze how much progress King Abdulaziz Medical City-Riyadh has made in achieving the targets among their HIV patients.

Methods: Data regarding HIV patient demographics, date of diagnosis, current treatment and viral load was extracted from patients' medical files. Patients included have been diagnosed with HIV between January 2003 and December 2017 in King Abdulaziz Medical City-Riyadh.

UNAIDS targets for HIV were used and calculation has been made according to their methodology.

Results: A total of 51 patients with HIV are currently following up KAMC-Riyadh. Based on national estimates of the disease, the expected number of HIV positive patients would be 354, only 14% of HIV positive people were diagnosed. Out of 51 patients diagnosed with HIV, 48 were on ART (94%), and out of the 48 patients on ART, 43 had achieved viral suppression (89%).

Conclusion: The first target is considerably underachieved, this is probably due to avoidance of applying to the military or ministry of national guard due to fear of rejection and stigma at the time of employment due to their HIV positive status. Therefore, the hospital needs to focus on screening programs to detect undiagnosed cases.

Both the second and third targets have been almost achieved, displaying the tremendous efforts which are being made in treating cases and keeping them on a suppressed viral load.

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In vitro activity of newer and conventional antimicrobial agents, including fosfomycin and colistin, against selected gram-negative bacilli in Kuwait

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Background and Purpose: Multi-drug resistant gram-negative bacilli present increasing and diverse problems globally with Kuwait being no exception. However, limited data are available on susceptibilities of these organisms to some of the recently made accessible antimicrobial agents. The in vitro activities of newer antibiotics, such as, ceftolozane/tazobactam (C/T) and ceftazidime/avibactam (CZA) along with some "older" antibiotics, namely fosfomycin (FOS) and colistin (CL), and conventional ones, for example, amikacin (AN), aztreonam (AZM), cefepime (FEP), ceftazidime (CAZ), ciprofloxacin (CIP), imipenem (IMP), meropenem (MEM), piperacillin/tazobactam (PTZ) and tobramycin (TOB) were determined against selected strains (resistance to ≥3 antimicrobial agents by disk diffusion or commercial methods) of Escherichia coli, Klebsiella pneumoniae, and Pseudomonas aeruginosa.

Methodology: Minimum inhibitory concentrations (MIC) were determined by Clinical and Laboratory Standards Institute microbroth dilution. 133 isolates comprising of 46, 39, and 48 strains of E. coli, K. pneumoniae and P. aeruginosa, respectively were tested.

Results and Discussions: E. coli isolates with MIC50/90, 8/16 μg/mL for AN; 0.5/1 μg/mL for CL; 4/32 μg/mL for FOS; 0.06/0.25 μg/mL for MEM; 0.25/32 μg/mL for C/T; 0.25/8 μg/mL for CZA, exhibited susceptibility rates of 91.3%, 95.7%, 97.8%, 89.1%, 76.1% and 89.1%, respectively. On the other hand, K. pneumoniae strains with MIC50/90, 8/512 μg/mL for AN; 0.5/1 μg/mL for CL; 256/512 μg/mL for FOS; 0.12/128 μg/mL for MEM; 2/128 μg/mL for C/T; 0.5/128 μg/mL for CZA showed susceptibility rates of 64.1%, 92.3%, 7.7%, 64.1%, 51.3%, and 64.1%, respectively. And P. aeruginosa isolates with MIC50/90, 64/128 μg/mL for AMK; 1/1 μg/mL for CL; 32/128 μg/mL for MEM; 128/128 μg/mL for C/T; 32/64 μg/mL for CZA presented susceptibility rates of 31.2%, 97.9%, 8.3%, 33.3%, and 39.6%, respectively.