29th ECCMID Amsterdam, Netherlands 13 – 16 April 2019

The congress of ESCMID

P1757 Evaluation of MICRONAUT-S Anaerobes MIC microdilution panels for antibiotic susceptibility testing of anaerobes

Miriam Cordovana*[1], Simone Ambretti[1]

[1] University Hospital of Bologna Policlinico Sant'Orsola-Malpighi, Bologna, Italy

Background: Susceptibility of anaerobes to antibiotics has become unpredictable, hence accurate methods for MICs evaluation are demanded. Many test systems have been described, with agar dilution as reference method, but they are laborious, time-consuming and burdened by several technical, interpretation and reproducibility issues that frequently hamper their implementation into routine workflows.

In this study, we evaluate the performance of the MICRONAUTS Anaerobes MIC broth microdilution panels with a collection of clinical anaerobes isolates, in comparison to a gradient tests MIC Strip Test results.

Materials/methods: N=38 anaerobes, comprising 27 different species of the genera *Bacteroides, Alistipes, Fusobacterium, Prevotella, Veillonella, Clostridium, Actinomyces, Propionibacterium, Peptostreptococcus,Eggerthella, Parvimonas, Bifidobacterium, Anaerococcus,* were tested with the MICRONAUT-S Anaerobes MIC panel (MERLIN Diagnostika, Germany), comprising ampicillin, penicillin, amoxicillin/clavulanic acid, piperacillin/tazobactam, meropenem, imipenem, ertapenem, clindamycin, metronidazole, doxycycline, moxifloxacin (8 concentrations), tigecycline (4 concentrations) and vancomycin (3 concentrations). The panels were incubated at 37 °C in anaerobic conditions for ≥24 h, and visually inspected. In case of no bacterial growth for the growth control, incubation was prolonged. The same bacterial suspension used for the standardized broth inoculum of the panels was used to perform susceptibility testing by MIC Strips (Liofilchem, Italy). Results were interpreted according to EUCAST breakpoints. Comparison was performed in terms of essential agreement, category agreement and error rates.

Results: Essential agreement with MIC Strips resulted 100% for all agents with the exceptions of amoxicillin/clavulanic acid and piperacillin/tazobactam (94.7%) and imipenem (97.4%). Category agreement with results of MIC strips resulted 100% for all agents, except for ertapenem (97.4%).There was no major error found and only one very major error in the case of ertapenem (2.6%)

For most isolates (26/38) the panels were readable after overnight incubation. In 11 cases it was necessary to prolong the incubation to 48 h, in 1 case to 72 h (*Fusobacterium limosum*)

Conclusions: The MICRONAUT-S Anaerobes MIC panels proved to be a very promising microdilution method for antibiotic susceptibility testing of anaerobes. It provided results consistent with gradient methodology, with both fast and slow growing species. Moreover, the ease-of-handling and the ease-of-results interpretation could make this method suitable for implementation in routine practice.