28th ECCMID EUROPEAN CONGRESS OF CLINICAL MICROBIOLOGY AND INFECTIOUS DISEASES
Madrid, Spain
21 – 24 April 2018

O0953 Evaluation of Rapid Polymyxin NP test to detect colistin-resistant Klebsiella pneumoniae in a tertiary hospital in Thessaly, Greece

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Background: Many methods have been proposed for antimicrobial susceptibility testing to colistin (AST). However, current EUCAST recommendations state that only broth microdilution (BMD) should be used as reliable method. Recently a commercial kit, the Rapid Polymyxin NP test, that is a colorimetric test based on formation of acid metabolites consecutive to the glucose metabolism as a sign of growth in the presence of colistin, is introduced in clinical laboratories. Purpose of the present study was the evaluation of this test compared with BMD.

Materials/methods: A total of 104 multi-resistant *K. pneumoniae* clinical strains, including 7 colistin-susceptible (MIC $_{\text{mean value}}$: 1.32 mg/L) and 97 colistin-resistant (MIC $_{\text{mean value}}$: 17.62 mg/L) based on BMD method, were examined by the Rapid Polymyxin NP test. In addition, all isolates were also tested by automated systems (Phoenix and Vitek -2) and gradient test (Liofilchem).

Results: All the isolates tested belonged to ST147, 258 and ST11 and were carbapenem-resistant, due to the presence of carbapenemase encoding genes (bla_{KPC}, bla_{VIM}, bla_{NDM}). Considering BMD as the reference method, the Rapid Polymyxin NP test failed to detect only one colistin-resistant. On the other hand, Phoenix, Vitek-2 and gradient test failed to detect four, two and four colistin-resistant *Klebsiella pneumoniae*, respectively.

Among the seven colistin-susceptible *K. pneumoniae* strains, no false resistance was found with the Phoenix system and the Rapid Polymyxin NP test. The Vitek system and the gradient test reported 3 colistin-susceptible isolates as resistant (the same isolates).

Conclusions: The Rapid Polymyxin NP test showed a good agreement compared with the BMD method, and seems to be easily and rapidly applied (3hours) in a routine clinical laboratory.