



Letter to the Editor

Are there safe VITEK2 MIC cutoffs to avoid errors in colistin susceptibility testing?★



Dear editor,

The emergence of extensively drug-resistant gram-negative bacteria, especially *Klebsiella pneumoniae*, *Pseudomonas aeruginosa*, and *Acinetobacter baumannii*, has resulted in the revival of colistin as a major antibiotic for the treatment of these infections (Karaiskos and Giamarellou, 2014). Therefore, the importance of accurate susceptibility testing of colistin is evident. Both the Clinical & Laboratory Standards Institute and the European Committee on Antimicrobial Susceptibility Testing in a joint statement currently recommend broth microdilution as the only reliable method for colistin susceptibility testing (Matuschek et al., 2018).

We read with interest the recently published article by Girardello et al. (2018) evaluating the performance of VITEK2 compared to broth microdilution for determination of colistin susceptibility. The authors found that, for *K. pneumoniae* and *Escherichia coli*, good correlation was obtained between the results of VITEK2 and broth microdilution when evaluated with isolates with ≤ 0.5 and ≥ 16 MICs. This suggests that testing with the reference method (broth microdilution) may be unnecessary when VITEK2-determined MICs are either very low (≤ 0.5) or very high (≥ 16 MICs).

However, the number of isolates with a VITEK2-determined MIC ≤ 0.5 was small ($n = 33$ for *K. pneumoniae* and $n = 29$ for *E. coli*). Therefore, the study may have been underpowered to detect the true rate of very major errors (when isolates are categorized as susceptible by VITEK2 but resistant by broth microdilution). Contrary to the findings by Girardello et al. (2018), in a larger study from Greece evaluating carbapenem-resistant *K. pneumoniae* isolates (Galani et al., 2018), about 7.5% of 227 isolates with a VITEK2-determined MIC ≤ 0.5 were categorized as resistant based on a validated commercial broth microdilution method (Matuschek et al., 2018).

In conclusion, larger studies are needed to evaluate whether a safe VITEK2-determined MIC cutoff exists below which broth microdilution is unnecessary. Until then, broth microdilution seems necessary to confirm VITEK-2 susceptibility testing results to avoid very major errors.

Stamatis Karakonstantis*

Charalampos Lydakis

Department of Internal Medicine, General Hospital of Heraklion
"Venizeleio-Pananeio", Heraklion, Greece, 71409

*Corresponding author. Tel.: +30-6940100298.

E-mail address: stamatiskarakonstantis@gmail.com.

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★ The authors have no conflict of interest to declare.