Letters to the Editor

Determination of Vancomycin-resistant *Staphylococcus aureus*

Dear Editor,

Regarding the recently published article in the Journal of Research in Pharmacy Practice by Karimzadeh *et al*. titled, Antimicrobial resistance pattern of Gram-positive bacteria during three consecutive years at the nephrology ward of a tertiary referral hospital in Shiraz, Southwest Iran. J Res Pharm Pract 2016; 5(4):238-47,[1] I would like to discuss some points:

The first clinical vancomycin-resistant *Staphylococcus aureus* (VRSA) (minimum inhibitory concentration [MIC] ≥32 μg/ml) was reported from Michigan, the USA, in 2002.[2] To date, there are few studies which have reported VRSA in Iran.[3] Vancomycin is the major antimicrobial agent available and it is the drug of choice for the treatment of serious infections caused by methicillin-resistant *S. aureus*; however, determination of VRSA is difficult due to methodological problems in their detection.[4]

The authors have reported two isolates of VRSA based on disk diffusion method, which is not considered to be an accurate or reliable method for the detection of VRSA. It is necessary to remember that according to the guidelines of the Clinical and Laboratory Standards Institute, MIC and agar dilution (brain heart infusion with 6 μg/ml vancomycin) tests should be performed to determine the susceptibility of all staphylococcal isolates to this antimicrobial agent. Moreover, the emergence of VRSA is due to the acquisition of the vanA gene cluster; therefore, the genetic analysis should be performed by evaluating mecA and vancomycin-resistant genes such as vanA, vanB, and vanC.

Although the disk diffusion test can accurately detect vancomycin-resistant isolates, it cannot differentiate vancomycin-intermediate isolates from vancomycin-susceptible isolates. *S. aureus* isolates with the MICs of 4–8 μg/ml and 16 μg/ml or more are classified as vancomycin-intermediate *S. aureus* and VRSA, respectively.[4,5] For these reasons mentioned above, detection and reporting VRSA isolates are not accurate and reliable in this study.

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Conflicts of interest

There are no conflicts of interest.

Farzane Ghasabi[1], Mehrdad Halaji[2], Samereh Nouri[3]

[1]Department of Bacteriology and Virology, Shiraz University of Medical Sciences, Shiraz, Iran,

[2]Department of Microbiology, Isfahan University of Medical Sciences, Isfahan, Iran,

[3]Clinical Laboratory of Al Zahra Medical Centre, Isfahan University of Medical Sciences, Isfahan, Iran

Address for correspondence:
Dr. Mehrdad Halaji, E-mail: Mehrdad.md69@gmail.com

References

1. Karimzadeh I, Mirzaee M, Sadeghimanesh N, Sagheb MM. Antimicrobial resistance pattern of Gram-positive bacteria during three consecutive years at the nephrology ward of a tertiary referral hospital in Shiraz, Southwest Iran. J Res Pharm Pract 2016;5:238.
2. Weigel LM, Clewell DB, Gill SR, Clark NC, McDougal LK, Flannagan SE, *et al.* Genetic analysis of a high-level vancomycin-resistant isolate of *Staphylococcus aureus*. Science 2003;302:1569-71.
3. Askari E, Zarifian A, Pourmand M, Naderi-Nasab M. High-level vancomycin-resistant *Staphylococcus aureus* (VRSA) in Iran: A systematic review. J Med Bacteriol 2015;1:53-61.
4. CDC. Laboratory Detection of Vancomycin-Intermediate/Resistant *Staphylococcus aureus* (VISA/VRSA). Atlanta, USA: Centers for Disease Control and Prevention (CDC); 2010. Available from: http://www.cdc.gov/HAI/settings/lab/visa_vrsa_lab_detection.html. [Last accessed on 2011 Jul 15; Last cited on 2011 Jul 20].
5. Clinical and Laboratory Standards Institute. Performance Standards for Antimicrobial Susceptibility Testing; TwentyFifth Informational Supplement. CLSI Document M100S25. Wayne, PA: Clinical and Laboratory Standards Institute; 2015.

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