Prevalence of VIM-2 Type Metallo-β-lactamase Gene in Pseudomonas aeruginosa from Clinical Isolates in Fars

Nehleh Nasiri*[1]; Kavous Solhjoo[2]; Mohammad Kargar[1]; Akbar Kazemi[2]; Saeideh Erfanian[2]

1- Department of Microbiology, Jahrom Branch, Islamic Azad University, Jahrom, Iran
2- Department of Microbiology, School of Medicine, Jahrom University of Medical Sciences, Jahrom, Iran
nehle_nasiri200@yahoo.com

Background & Objectives: Resistance to carbapenems in *Pseudomonas aeuginosa* is often due to production of metallo-β-lactamase. MBLs belong to ambler class B and has been described from various part of the world, including Asia.bla VIM-2 was first identified in southern of France from a *P.aeruginosa* isolates in a blood culture from a neutropenic patient in 1996.VIM-2 is closely related to VIM-1(90% amino acid identify) and was encoded by a gene cassette in class 1 integron. The aim of this study was to determine the prevalence of bla VIM-2 in P.aeruginosa isolates in Fars by PCR.

Methods: In this describtive-analytic study,120 *P.aeruginosa* collected from clinical isolates in Fars. All of clinical isolates resistant to Imipenem by disk diffusion methods, were screened for production of MBL by E-test MBL. PCR assay was performed for detection of bla VIM-2 gene.

Results: Out of the 120 *Pseudomonas aeuginosa* isolates, 90(75%) were resistant to Imipenem. 26(29%) of which were positive for production of MBLs by E-test MBL. Out of 26 *Pseudomonas aeuginosa* producing MBL, 13(50%) isolates were positive for bla VIM-2 by PCR assay.

Conclusion: Based on the study result, significant proportion of the resistance to Imipenem is due to MBL production. Considering the emergence of blaVIM-2 in Fars, which can be transferable and spread horizontally among other strains, using the appropriate treatment protocol based on antibiogram pattern of the strains is highly recommended.

Keywords: Pseudomonas aeuginosa; Bla VIM-2; MBLs; PCR