Original Article

Detection of Methicillin-Resistant *Staphylococcus Aureus* by Phenotypical and Molecular Methods among Clinical Isolates

Zare, Z. (MSc)
MSc of Microbiology, Depatment of Microbiology, Islamic Azad University, Jahrom Branch, Jahrom, Iran

Solhjoo, K. (PhD)
Assistant Professor of Medical Parasitology, Department of Microbiology, Faculty of Medicine, Jahrom University of Medical Sciences, Jahrom, Iran

Norooznejad, MJ. (MSc)
Instructor of Microbiology, Department of Microbiology, Islamic Azad University, Jahrom Branch, Jahrom, Iran

Kazemi, A. (MSc)
Instructor of Medical Microbiology, Department of Microbiology, Faculty of Medicine, Jahrom University of Medical Sciences, Jahrom, Iran

Corresponding Author:
Solhjoo, K.

Email:
solhjouk@yahoo.com

Received: 3 Sep 2013
Revised: 24 Nov 2013
Accepted: 30 Dec 2013

Abstract

Background and Objective: Increasing prevalence of methicillin resistant *Staphylococcus aureus* strains (MRSA) with their multidrug resistance potential causes difficulties in the treatment of infections due to these bacteria. Hence, the detection and determination of the frequency of MRSA strains via phenotypical and molecular methods is necessary in different parts of the county.

Material and Methods: In this cross- sectional study, 150 *Staphylococcus aureus* strains were collected from different clinical samples in the hospitals located in Shiraz and Jahrom, Iran. To detect methicillin resistant *Staphylococcus aureus* strains, we used phenotypical methods such as disc diffusion and minimum inhibitory concentration by E-Test, and PCR molecular method for *mass* gene.

Results: The frequency of methicillin resistant *Staphylococcus aureus* was 63 strains (42%) using disc diffusion and E-Test. while in PCR method, in addition to 63 strains, nine other isolates, which were sensitive to oxacillin by disc diffusion and E-Test, possessed also *mecA* gene. By and large, 72 isolates (48%) had methicillin resistance gene.

Conclusion: Given the results of phenotypical and molecular methods, the frequency of methicillin resistant *Staphylococcus aureus* was relatively high in this area. Thus, the MRSA strains can be detectable as soon as possible by accurate and sensitive methods such as PCR to determinate the effective antibiotics.

Keywords: Methicillin Resistant *Staphylococcus Aureus*, MRSA, *MecA* Gene, PCR

This paper should be cited as: Zare Z, Solhjoo K, Norooznejad MJ, Kazemi A. [Detection of Methicillin-Resistant Staphylococcus Aureus by Phenotypical and Molecular Methods among Clinical Isolates]. mljgoums. 2014; 7-13(Suppl 4): [Article in Persian]