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## Molecular identification of Methicillin resistant Staphylococcus aureus and evaluation of Panton Valentine Leukocidin Gene as a sole marker for CA-MRSA

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**Background:** Infections caused by MRSA represent a growing problem and a challenge for healthcare institutions.

**Aim of work:** To compare the efficacy of phenotypic methods for identification of MRSA with genotypic method and to evaluate if PVL gene could be used as sole marker for CA-MRSA.

**Material & methods:** 88 isolates of Methicillin-resistant Staphylococcus aureus (MRSA) were included in this study. Phenotypic identification was done by Oxacillin DD, Penicillin-Binding Protein 2a (PBP2a), latex agglutination and Cefoxitin DD. Molecular detection of mec-A gene and PVL gene was done by real time PCR.

**Results:** The PVL gene was detected among 46.8% of CA-MRSA, while only in 12.2% Hospital-associated MRSA (HA-MRSA). 88 mec A positive isolates were identified as MRSA by oxacillin DD, PBP2a latex agglutination and cefoxitin disc diffusion (DD) methods with sensitivity of 92%, 98.8% and 100% respectively. Patients with Panton-Valentine leukocidin (PVL) positive CA-MRSA were significantly younger males mostly of skin and

soft tissues origin ( $p = 0.002$ ). It showed distinctive antibiogram profile being significantly more sensitive to Levofloxacin, Moxifloxacin, Ciprofloxacin, Gentamicin, Clindamycin ( $p < 0.001$ ) and Tetracycline ( $p < 0.05$ ).

**Conclusion:** The best phenotypic method for detection of MRSA is the combination of the cefoxitin DD and the latex agglutination test. The presence of PVL gene cannot be used as a sole marker for CA-MRSA. [Sahar M Ali, Eman AM Bayoumi, Tarek A Alshazly. Molecular Identification of Methicillin resistant Staphylococcus aureus and Evaluation of Panton-Valentine Leukocidin Gene as a sole marker for CA-MRSA.

### Biography

Dr. Tarek A. Elshazly has completed his MD from Mansoura University Egypt. He is assistant professor in Internal Medicine Department with different activities which include teaching activities for both under and post graduates, managing inpatient and outpatient clinic, supervising endoscopic unit in specialized medical hospital and emergency hospital. He is interested in research activities and publication.

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