IDENTIFICATION OF PANTON-VALENTINE LEUKOCIDIN GENE AMONG METHICILLIN RESISTANT STAPHYLOCOCCUS AUREUS ISOLATED FROM THE HOSPITALIZED PATIENTS IN IRAN.

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Background: Methicillin-resistant Staphylococcus aureus (MRSA) infections have been known in obstetrics and gynecology departments. These organisms could be also causative agent of abscess formation in breast.

During recent years it has reported that colones of community associated methicillin resistant S. aureus (CA-MRSA) are resistant to antibiotics less than hospital-associated MRSA (HA-MRSA) strains. However their pathogenicity is more than hospital strains. Panton-Valentine leukocidin (pvl) genes considered as an important characteristic of CA-MRSA. The aim of this study was evaluation of frequency of pvl genes in MRSA strains which were isolated from patients in teaching hospitals of Ahvaz city, Iran.

Methods: Two hundreds and fifty five Staphylococci isolates were collected from the patients and examined during 12 months. These isolates were identified using gram stains and standard biochemical tests such as: catalase, coagulase, manitol fermentation and DNase. MRSA strains phenotypically were screened after determination of their sensitivity patterns against 10 antibiotics by disk diffusion method. Then DNA was extracted from MRSA and mecA gene amplified by PCR. Finally, pvl genes were identified among MRSA strains which were positive for mecA gene and the positive strain was sequenced.

Results: Out of 255 suspected isolates, 180 strains were confirmed as S. aureus. The sensitivity rate to examined antibiotics were as follow: Vancomycin (100%), nitrofurantoin (98.3%), chloramphenicol (98.3%), rifampin (90%), Norfloxacin (71.1%), gentamicin (69.4%), ciprofloxacin (67.2%), azithromycin (66.7%), oxacillin (62.8%), cotrimoxazole (60.6%). These results also showed that out of 180 strains of S. aureus, 59 strains (32.8%) were phenotypically resistance to methicillin which among them, the mecA gene were confirmed in 58 strains by PCR. We identified only one strain with pvl gene which was confirmed by sequencing PCR product.

Conclusion: CA-MRSA strains which carry pvl genes are more aggressive compared with HA-MRSA strains. If these strains spread to different sections of hospital, including obstetrics and gynecology departments, could be life threatening. Therefore, identification and treatment of these strains is important in prevention of spread and colonization of them.