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Lia Monica Junie

University of Medicine and Pharmacy, Romania

The genes content of *S. aureus* strains responsible for hospital and community-acquired infections

MRSA strains were identified after the introduction of methicillin in therapy. Methicillin resistance is due to the acquisition of the mecA gene, which encodes PBP2a. Methicillin resistant *S. aureus* (MRSA) is responsible for hospital (HA-MRSA) and community-acquired infections (CA-MRSA). Toxic-shock syndrome toxin (TSST), enterotoxins (SE), exfoliatins(Ets), Panton-Valentine leukocidin (PVL) are SA pathogenicity factors. The genes for the stapylococal enterotoxins are placed on the egc locus and are controlled by the agr regulatory genes. The purpose of our study was to investigate the genes presence (tsst, PVL, agr, SEM & SEG) among the SA isolates; to establish the prevalence of these genes, to identify the resistant phenotypes and their correlation.

Materials and methods: The study included clinical isolates. The identification and the AB resistance profiles of the strains were performed by standard and automated methods (Vitek2 Compact). The genes content of the isolated strains were detected by PCR.

Results: In 21, 3% of the strains the genes per isolate were up to 5 and in 27,7% were 2; The tsst gene was not detected. The gene contents was: SEM & SEG (44,7%), PVL (19.1%) and agr (48,9%): agr III (27,7%), agr I (10,6%), II (6,4%) and IV (2,1%). All arg positive strains are MRSA strains. The MRSA tested strains showed a high resistance to AB. The antibiotic sensitive MSSA strains contain the SEM and the SEG genes.

Conclusion: Following the strains antibiotic resistance profile, carrying the agr genes alone or associated with the SEM, SEG, PVL genes, we emphasize that, in our geographic area, circulate SA strains with different resistance phenotypes. There isn't any correlation between the AB resistance phenotypes and the genes content, for suggesting their existence. This indicates the urge to detect the genes by PCR, for limiting the spread of the strains in hospitals and community.

Biography

Lia Monica Junie has received MD and PhD degrees from the Microbiology Department of "Iuliu Hatieganu" University of Medicine and Pharmacy, Cluj-Napoca, Romania. Currently she is the Professor and also coordinates PhD doctor's thesis in the medicine field. She unfolds a fruitful National and International scientific activity as an experienced microbiologist, having an impressive CV. She is Member in the Board of Scientific Societies, Reviewer in many peer-reviewed journals. She coordinated research projects, published books and more than 200 scientific articles in prestigious journals. She organized and attended numerous national, international congresses, as president, member in the Organizing Committees, Invited speaker, Keynote speaker or Chairperson. She unfolds a high level activity after years of experience in research, evaluation, teaching and administration both in hospital and education institutions.

mjunie@umfcluj.ro