Study on Superantigen gene Frequency (se) and (tst-1) in MRSA Stains Isolated Cilinical Samples Using Multiplex PCR

maryam jamali rad*,

Introduction: Staphylococcus aureus is a common cause of infection in both hospitals and the community, and it is becoming increasingly virulent and resistant to antibiotics. It produces numerous toxins including superantigens that cause unique diseases such as toxic shock syndrome. The SAg family includes Staphylococcal enterotoxins (SEs) and S. aureus toxic shock syndrome toxin (TSST). Materials and Methods: To investigate three staphylococcal enterotoxin genes (se) and toxic shock syndrome toxin-1 gene (tst-1) in Staphylococcus aureus, 200 isolates various origins were studied. Identification of these isolates was carried out by conventional methods. Methicillin resistance was confirmed by amplification of mecA gene by PCR. Amplification of superantigens genes was performed by multiplex PCR. Results: Based on antibiogram test results, 50 isolates were resistant to methicillin. Methicillin resistance was confirmed in 30 isolates by MIC test. Amongst them, 20 isolates carried mecA gene. Sei and seg were found in 2 and 1 isolates respectively. Tst-1 and see genes were not seen. Conclusion: In conclusion, multiplex PCR system is an effective tool in comprehensive identification of superantigen genes in investigation of S. aureus. Moreover, further studies on staphylococcal superantigen genes are needed in order to understand their pathogenic functions.

Keywords : staphylococcus aureus, superantigen genes, MRSA, mecA gene