Background: Staphylococcus aureus has been known as a causative agent in intrauterine and puerperal infections and also in menstrual-related toxic shock syndrome. Resistance to macrolide, lincosamide and streptogramin B in Staphylococcus aureus can be mediated by erm and msrA genes. Resistance via erm genes may be inducible or constitutive. A simple phenotypic test as D-test can differentiate isolates with inducible resistance. The aim of this study was to investigate the incidence of inducible clindamycin resistance and determine the most frequency of erm and msrA genes among S. aureus isolates.

Methods: In this study a total of 124 Staphylococci isolates collected from clinical specimens were identified and confirmed as S. aureus by standard biochemical tests and were examined with disk diffusion method. All of isolates were also tested by PCR for mecA, ermA, ermB, ermC and msrA genes.

Results: According to PCR results, 48.4% of isolates had mecA gene and 51.6% were mecA negative. By phenotypic D-test method, 32.3% revealed inducible resistance and recorded as D and D+. Sensitive and constitutive phenotypes were found in 54.8% and 12.9% of isolates respectively. Inducible clindamycin resistance was more prevalent in MRSA (29%) than MSSA isolates (2.4%) (P-value < 0.001). Among studied erm genes, the most frequency genes were ermA and ermC with 41.1% and 17.7%, respectively and only three isolates of them had D phenotype. All isolates were negative for ermB or msrA genes.

Conclusion: Since S. aureus isolates with inducible resistance may mutate and change to constitutive resistance, so to avoid of probable treatment failure, we suggest that it is necessary to test inducible resistance in which isolates, that are resistant to erythromycin and sensitive to clindamycin.