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**Title:** Rapid detection of Methicillin Resistant Staphylococcus aureus from throat and Nasal Swab Specimens Using Real-Time PCR

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**Abstract:** Background: Methicillin-resistant Staphylococcus aureus (MRSA) is one of the most important nosocomial pathogens that has emerged as a serious threat to public health worldwide. Therefore, prevention and control of infections caused by this important bacterium, a special role to reducing hospital infections and reduce morbidity and mortality. Methicillin-resistance is conferred by the mecA gene, which encodes a penicillin-binding protein (PBP2A) with decreased affinity for β-lactam antibiotics including the penicillinase-resistant penicillin. In Staphylococcus aureus, mecA is part of a mobile genetic element called the staphylococcal cassette chromosome (SCCmec).

Objectives: The purpose of this investigation was using Real-Time PCR for detecting Methicillin-resistant Staphylococcus aureus colonization directly in nasal and throat swab specimens collected from Personnel's and Patient's in Tonekabon's Shahid Rajaee Hospital.

Methods: In this study, 200 samples collected from nasal and throat of personnel and patients. Samples were stored at -20°C, then DNA was extracted by High Pure PCR Template Preparation kit Roche Company). For the rapid detection of methicillin-resistant staphylococci directly from nasal and throat swabs, we implemented a Real-Time PCR using femA primers specific for detecting Staphylococcus aureus and the mecA gene encoding methicillin resistant. Also in this study to enhance accuracy and specificity were used prob.

Results: From among 200 nasal and throat swabs collected, 22 samples had two peaks in the melting curve for femA and mecA genes as Methicillin-resistant Staphylococcus aureus were reported. The results also showed that nasal carriers of MRSA are more than throat carriers. Frequency of MRSA strains in the nose and throat persons, 8% and 3% respectively. The prevalence of MRSA colonization among Personnel is higher than Patients and hence can be a potential source for its colonization of other personnel and patients in the hospital environment.

Conclusion: Real-Time PCR assay is a sensitive, specific and powerful method for the detection of MRSA directly from a swab specimen, without the need for an initial culture. So reduces the time of detection of MRSA carriers from 48–72 to 2–5 h.

- Methicillin-resistant Staphylococcus aureus, Real-Time PCR, prevalence

**Presentation:** Poster