

Incidence of Methicillin-resistant *Staphylococcus aureus* nasal carriers' among medical students and patients at Prince Hamza Hospital in Jordan

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Background: Nasal carriers of Methicillin-resistant *Staphylococcus aureus* (MRSA) are common and play important role in noscomial infections. The incidence rate of nasal carriers of MRSA in medical students and patients at Prince Hamzah Hospital (PHH) was not investigated before.

Methods: In the last 2 years, 390 nasal swabs were collected from medical students at Hashemite University before and after commencement of clinical rotations. 200 samples were collected from patients admitted to PHH. All samples were processed according to standard microbiological procedures to isolate MRSA. MRSA samples were tested using disc diffusion test, Automatic Vitk 2, slide test, and molecular analysis.

Results: Out of 290 samples collected from medical students; 56 Samples were Methicillin-sensitive *Staphylococcus aureus* (MSSA), and 12 were MRSA according to disk diffusion method. 22 cases were confirmed as MSSA and 7 cases confirmed as MRSA using Vitek 2 analysis. 29 cases were positive by latex agglutination for detection of penicillin binding protein (PBP). 100 samples collected from medical students before and after 1 year of commencement of clinical rotations indicated slight increase in MRSA rate from 2% to 4%. Males and Amman city citizens have higher rate of *S. aureus* colonization. All isolates were sensitive to vancomycin and linezolid. 200 patents samples admitted to PHH are currently evaluated for MRSA rate.

Conclusion: In this study the incidence rate of nasal colonization of MRSA among medical students is 2.4% and 7.6% for MSSA. MRSA colonization slightly increased after 1 year of commencement of clinical rotations. Other international studies indicated similar rates of MRSA nasal colonization among medical students (range 0-4%). This study indicates the presence of positive nasal colonization in medical students necessitating further attention to prevent noscomial infections.