

Abstract

The present study aimed to investigate the prevalence of Methicillin Resistant *Staphylococcus aureus* (MRSA) in the burn patients at AL-Hussien teaching hospital during the period from September, 2013 to January, 2014 in Thi-Qar province, Iraq. From a total of two hundred burn swab samples, there were 90 isolates recorded a positive *Staph. aureus* culture with a percentage of (45%). Identification was done depending on morphological, cultural, microscopical characterization and biochemical tests. The diagnosis was confirmed serologically by Staphylo Monotec test kit Plus and API Staph System. Males tends to be more affected with *Staph. aureus* with 47 patients (52.22%), compared to females with 43 patients (47.78%) ($p>0.05$). According to age, the age group of (21-30) years old recorded the highest *Staph. aureus* infections with 32 patient (35.56%), followed by the age group of (1-10) and (11-20) years old with 27 (30%) and 16 (17.7%) patient, respectively. The age group of (41-50) years old showed the lowest infection with 6 patients only (6.67%) ($P\leq 0.01$). According to the site of infection, hands showed the highest *Staph. aureus* infections with 25 isolates (27.77%), followed by feet and necks with 20 (22.22%) and 16 isolate (17.77%), respectively. Axilla and back sites showed the lowest infections with one *Staph. aureus* isolate with a percentage of (1.11%) for both ($P\leq 0.01$).

A total of 90 isolates of *Staph. aureus* were further examined using polymerase chain reaction (PCR) for detection of *mecA* gene, 16s rRNA and PVL. The results revealed that MRSA isolates yield amplification products of *mecA* gene with 68 isolate (75.5%), while 16S rRNA found in all isolates and only four isolates (4.4%) were PVL positive ($P\leq 0.01$).

Additionally, *Staph. aureus* isolates were tested for their antibiotics susceptibility patterns to 10 different antibiotics. The results showed that 88.8% of *Staph. aureus* isolate were resistant to (Ampicillin/Cloxacillin) followed by Erythromycin and Oxacillin with a percentage of 81.1% for both. There were a variable resistance percentage for the rest of antibiotics: trimethoprim/sulfamethoxazole (80%), Methicillin (75.5%), gentamicin (72.2%), ciprofloxacin (70%), tetracycline (55.5%). On the other hand, *Staph aureus* isolates showed high sensitivity to Chloramphenicol (86.7%), and Vancomycin (85.6%) ($P \leq 0.01$).

Chapter One

Introduction