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ABSTRACT

Prevalence and Pattern of Antibiotic Resistance of Staphylococcus Aureus Isolated from Non-nosocomial Environment

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Background: Different studies indicate that Staphylococcus aureus is a common bacterium that causes an infection that led to different diseases such as pneumonia and sepsis, a mutation developed from it called Methicillin-resistance staphylococcus aureus (MRSA) and its treatment is limited by a few antibiotics.

Objectives: This study aims to determine the prevalence and pattern of Staphylococcus aureus on a University campus in Palestine as a non-nosocomial area and measure its resistance to a group of antibiotics (Ampicillin, Oxacillin, Cefoxitin, Erythromycin, Tetracycline, Ciprofloxacin, Trimethoprim).

Methods: We took 120 swap samples from several points (door handles, toilet sites, chairs, tables, coffee machines buttons, elevators, sink buttons, and gym tool) on the campus grouped one, and another 80 from the oral and nasal cavity volunteer students grouped two, the samples were plated on Mannitol Salt Agar (MSA) and incubated, then we cultured it on Nutrient Agar, after that we did differential biochemical tests (Gram stain, Catalase test, and Coagulase test) to detect Staphylococcus aureus, we did antibiotic susceptibility test on muller Hinton media using Clinical Laboratory Standard Institutes. Isolates resistant to Oxacillin, Cefoxitin, and susceptible to Trimethoprim are considered MRSA.

Results: A total of 38 samples (19%) from 200 samples taken from the campus were positive for Staphylococcus aureus, which 34 (89.5%) were MRSA, two of them were resistant to all

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antibiotics used, while the others were resistant to 3 or more antibiotics within that resistance to cefoxitin and oxacillin and susceptible to Trimethoprim, the highest MRSA isolates were from tables and coffee machine buttons in Group one, while the group two have less MRSA in the oral cavity rather than highest in the nasal cavity.

Conclusions: The high prevalence of MRSA on campus indicates the need for effective cleaning, treatment by trimethoprim should be monitored, and more studies need to be done to monitor the prevalence and resistance to antibiotics.

Keywords: Staphylococcus aureus, MRSA, Antibiotic Resistance, Non-nosocomial, University campus.

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