

PP 22

Prevalence of Antimicrobial Resistance among *Staphylococcus aureus* Isolates from Clinical Samples in Teaching Hospital Mahamodara

Sufna M.S.F.^{1#}, Weerasinghe N.P.²

¹Department of Medical Laboratory Science, Faculty of Allied Health Sciences,
University of Ruhuna, Sri Lanka

²Department of Microbiology, Faculty of Medicine, University of Ruhuna, Sri Lanka

[#] Corresponding author: sufnasuhail820@gmail.com

Background: Antimicrobial resistance in *Staphylococcus aureus* causing human infections is associated with high morbidity and mortality.

Objectives: To describe the prevalence of antimicrobial resistance among *S. aureus* isolated from clinical samples at Teaching Hospital Mahamodara (THM).

Methods: A descriptive cross-sectional study was conducted at THM. Antibiotic sensitivity patterns of 383 isolates of *S. aureus* were tested using standard disc diffusion method recommended by the Clinical and Laboratory Standards Institute (CLSI). Sensitivity tests were performed in duplicate on 33 isolates, collected prospectively over a period of two months from January to March 2021. Mean diameters were recorded. Names of patients were noted to avoid repetition of the same sample from the same patient. Data on remaining 350 isolates were obtained retrospectively from most recent laboratory records. Results were interpreted according to the CLSI 2009 criteria. Prevalence of antimicrobial resistance to different antibiotics were expressed in percentages. Statistical analysis was carried out using z-test at $p < 0.05$ level of significance.

Results: Out of 383 isolates of *S. aureus*, majority (n=356) were from swabs; 210 (59.8%) high vaginal swabs (HVS), 72 (20.5%) eye swabs, 53 (15.1%) wound swabs and the remaining were from other sites. Only 7% (n=27) were from blood, urine and pus. Methicillin-resistant *S. aureus* (MRSA) constituted 47.8% (n=183) of the total isolates. The highest percentage (44.8%) of MRSA were isolated from HVS. Methicillin sensitive *S. aureus* (MSSA) resistance rates to erythromycin, clindamycin, gentamicin and co-trimoxazole were 50.8%, 10.7%, 15.0% and 1.7%, respectively, while MRSA showed resistance rates of 65.6%, 27.4%, 12.5% and 2.2% to same antibiotics. Significant resistance to erythromycin ($p=0.004$) and clindamycin ($p < 0.001$) were observed in MRSA.

Conclusions: Prevalence of MRSA at THM is comparable to that of other tertiary care hospitals in Sri Lanka. MRSA strains are more likely to be resistant to erythromycin and clindamycin than MSSA.

Keywords: Antimicrobial resistance, MRSA, MSSA, *Staphylococcus aureus*