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## **ABSTRACT**

The present study was conducted at Mayo Hospital Lahore to determine the *in vitro* antimicrobial activity of different antibiotics against pathogenic *Staphylococcal Sp.* from human origin and their antimicrobial susceptibility pattern to commercially available drugs. A total 570 clinical samples were collected from different units and processed in Microbiology Diagnostic and Research Laboratory of Mayo hospital Lahore. *Staphylococcal Sp.* Were identified by culturing, centrifugation, microscopy and biochemical tests, then susceptibility pattern against different drugs were determined. The prevalence factors associated with *Staphylococcal* infections were age, gender, source and type of *Staphylococci*. A total of 570 clinical samples were analyzed and from these samples, 158 isolates were obtained. The most common *Staphylococcal* pathogens observed here were *MRSA* 77 (48.73%), followed by *MSSA* 51(36.71%), *MSSE* 23 (14.55%) and *MRSE* 7(4.43%). *MRSA* was the commonest *Staphylococcal* pathogen isolated, was responsible for *Staphylococcal* infections in clinical patients. Kirby-Bauer disc diffusion method was used to determine the susceptibility pattern of these pathogens. Thus *in vitro* study showed that Gram positive *Staphylococcal* bacteria, *MRSA*, *MSSA*, *MRSE* and *MSSE* were more resistant to Erythromycin, Penicillin, Cefoparazone and Amoxicillin, and these were sensitive to Vancomycin, , Linezolid, Sparfloxacin, Levofloxacin, Gentamycin, Augmentin and Fucidic acid Streptomycin, Piperacillin/Tazobactam. This study concluded that, all health care prescribers must know about the rational use of antimicrobial agents and educate the community about the dangers of misuse or overuse of antibiotics. A very prudent antibiotic policy therefore is highly desired. More surveillance studies are required in order to estimate the magnitude of the problem.