Abstract

The purpose of this study was to determine the prevalence of surgical site infections (SSI), to isolate bacterial pathogens from sternal wounds, and to study anti-microbial susceptibility patterns of the organisms that were isolated during the process. SSIs are infections that occur up to 30 days after surgery and affect either the incision or deep tissue at the operation site. This study comprises 400 patients from the Cardiac Surgery Department of Jinnah hospital Lahore. Bacterial pathogens were isolated and identified from the samples collected. Different tests were run to detect antimicrobial susceptibility patterns of identified pathogens. ***Staphylococcus aureus*** *(S. aureus)* is a significant isolate leading to sternal wound infections and is resistant to Penicillin and Fluoroquinolones, while it shows incredible sensitivity to Tetracycline and Oxacillin. According to previous reports, *S. aureus* had shown 100 % sensitivity against Vancomycin and Linezolid, but now it is becoming resistant to them. It is presumed that the recurrence of Multi-Drug Resistant (MDR) gram-negative microscopic organisms in sternal wounds is high and the resistance rate is 79 % which is substantially higher than the sensitivity rate i.e. 21%. Many gram-negative bacteria are MDR which is a problematic situation. ***Escherichia coli (E. coli)*** and ***Klebsiella pneumoniae (Kleb. Pneumoniae)*** are highly resistant to third and fourth-generation Cephalosporines. The resistance rate for gram-negative bacteria against Ceftazidime was earlier reported 15% whereas, it is now increased to 83% and that of Imipenem and Meropenem has risen to 33 %. Piperacillin-tazobactam and Polymyxin-B were the most effective antibiotics against non-fermenters.