

Evaluation of Surgical site infections in relation to risk factors and prophylactic use of antibiotics

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Abstract

BACKGROUND

Despite improvements in prevention, Surgical site infections remain a significant clinical problem as they are associated with substantial mortality and morbidity and impose severe demands on healthcare resources. With the objective of evaluating the surgical site infections in different classes of wounds in Safdarjung Hospital and compare them with the expected international standards, to understand the risk factors associated with them and to study the microbiological profile, a study was conducted during the period (10 June 2010 to 8 August 2010).

METHODS

All general surgery patients who underwent surgery during the specified period were included in the study. Demographic details, clinical history and other relevant details (potentially modifiable risk factors, treatment records, follow up records, ASA score). NNIS score was computed for each participant. Participants were surveyed weekly by telephone and OPD visits for 30 days from the date of surgery. Patients with surgical site infections were managed as per standard protocol. Wound swab/pus sample and other appropriate samples were collected and processed. Identification of bacteria and

antibiotic susceptibility were done as per CLSI Guidelines (2002, 2008).

RESULTS

A total of 100 patients (50 elective and 50 emergency) were included in the study. Patients were classified by wound class as per CDC criteria. Of the total patients (n=100) studied, 35% of the patients developed SSI, mortality rate of 2.8%. Infection rate was found to be significantly higher in emergency surgical patients as compared to elective surgical patients ($p < 0.05$). Statistically significant association was noted between presence of drains and development of surgical site infection in patients with Class III wound and between ICU stay and development of surgical site infection in Class III and Class IV wound. Most common bacterial isolate was found to be Klebsiella. Alarming antibiotic resistance patterns were noted.

CONCLUSION Infection rates were found to be significantly higher in our hospital (especially Class III and Class IV) when compared to international standards. A wide spectrum of risk factors are associated with SSI. Antibiotic resistance is an increasing problem in SSI. Comparison of data of our hospital to the international benchmarks will help us providing better health care.