Surveillance of Surgical Site Infections at The Aga Khan University Hospital, Nairobi

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ABSTRACT

Surgical site infections (SSI) remain a major clinical problem contributing to significantly high morbidity, mortality, and patient hospital costs. Post-operative infections have always been a feature of human life and sepsis in modern surgery continues to be a significant problem for healthcare practitioners across the globe. Patients that are undergoing surgery or surgical procedures are at risk of acquiring infection at the site of incision as result of the same procedure. SSIs are real risks associated with any surgical procedure and represent a significant burden contributing to morbidity and mortality, and increased cost to health services around the world. Despite Surgical site infection being a relatively serious problem in our health institution, there are scanty published reports on the bacterial pathogens (especially their antibiograms or molecular epidemiology) that are involved in SSIs in our local hospitals. The sporadic reports from the public sector hospitals are mainly from the Microbiology laboratory records which may not show the complete clinical picture. These reports from the records have been used to estimate or predict this predicament. This study aimed at determining the occurrence of SSI, pathogens associated with SSI, the antibiograms of the causative pathogens and specific risk factors associated with SSI at Aga Khan University Hospital, Nairobi (AKUH-N). It was a prospective observational study with patient follow-up until the 30th postoperative day, carried out at AKUH-N. The study recruited 175 respondents (patients) admitted for general surgical procedures from March 2008 to December 2008 at the hospital and were eligible to take part in the study. To eligible respondents, questionnaires were administered; preoperative and intra-operative samples were obtained for culture. After surgery patients were observed for symptoms of infection. Reviews were done through the

consulting clinics, breast clinic and casualty dressing clinic. In cases of infection, pus swabs were obtained for culture. All the samples were transported to the laboratory for culture. Cultures were done using standard bacteriological procedures. The samples were cultured in Blood agar, MacConkey and Chocolate agar. Sensitivity was done on Mueller Hinton Agar medium. Disc diffusion was used to determine the antimicrobial susceptibility patterns to a panel of commonly available drugs against the pathogens implicated in the infection. Patients' data were managed using EPI-INFO statistical program and analyzed using SPSS version 17, mean, median, frequencies and cross tabs were used to interpret the data. The findings were presented in tables and pie chart. The study found out that the SSI incidence rate was 6.8%. Pathogens isolated from SSI included *S. aureus* (30%), Coagulase negative *Staphylococcus* (16%), *Klyuvera spp. (13%), E. coli (13%), P. aeruginosa (13%), Klebsiella spp. (9%)* and other Gram negative. *S. aureus* was the most prevalent pathogen isolated from infected surgical site with 10% ORSA rate. Vancomycin was potent on Gram positive bacteria. Preoperative stay ≥ 2days (p=0.002) and wound class (p=0.003) at p< 0.05 (95% confidence interval) were the risk factors associated with SSI among patients admitted for general surgical procedure at the hospital during the study period. From the findings of this study, it can be concluded that incidence rate of SSI of 6.8% is relatively lower than documented SSI incidence rates in other studies in the Kenya. *S. aureus* (30%) is the most prevalent pathogens associated with SSI at AKUH-N, similar to findings from other studies done in the region. Ampicillin and Cotrimoxazole are not potent against pathogens associated with SSI in AKUH-N. Prolonged hospital stay and dirty wounds are the main risk associated with post surgical sepsis at the AKUH-N.