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125. Surgical site infections among post-operative patients by Methicillin-resistant *Staphylococcus aureus*(MRSA).

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Abstract

Antimicrobial resistance is one of the major threats to global health. There has been a marked increase in the number of drug resistant pathogens in the recent past and this has had great detriment to patients worldwide. One such pathogen is Staphylococcus aureus. The world health organization (WHO), in the 2024 updated bacterial priority pathogen list (BPPL) ranks this bacterium as one of the high priority pathogens causing a huge public health effect. This bacterium has developed resistance to a Methicillin which has been for the longest time the drug of choice in management of Staphylococcal Infections among patients. The consequences of this resistant have been greatly felt by post-operative patients in surgical wards of various healthcare centers who have acquired this nosocomial infection at the Surgical site. Methicillin resistant staphylococcus aureus accounts for 37% of all surgical site infections in hospitals. This experimental study was conducted between January 2024 and May 2024 in a level six hospital in Meru County. A total of 82 patients participated in the study. Clinical samples from their surgical sites were isolated and antimicrobial susceptibility testing was carried out by the Kirby-Bauer disk diffusion method against Oxacillin and Cefoxitin which are the current gold standard indicator drugs for determining Methicillin resistance in staphylococcus aureus. The study also deployed questionnaires to determine several patient and health system factors that contribute to MRSA incidence. Out of the 82 samples analyzed 25(30.49%) were found to be positive for MRSA, and showed resistance to both Oxacillin and Cefoxitin. A number of healthcare system factors were also found to cause increased incidence such as empirical diagnosis and prescription of antibiotics. Sharing of personal effects as well as crowding within the hospital. Age was also found to be a predisposing factor since most of the infections were witnessed among older patients.MRSA incidence shows a major setback in patient management in terms of cost and prognosis. It is therefore incumbent among healthcare professionals to adhere to existing infection prevention protocols. Proper pre-operative, Intra-operative and post-operative patient care is necessary in order to optimize patient outcomes in clinical settings and to reduce resistance.

Keywords: *Antimicrobial resistance, Surgical site infection, Methicillin Resistant Staphylococcus aureus*