

Comparative cross-sectional study evaluating four different single antibiotic prophylaxis in orthopedic surgeries for prevention of surgical site infection

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Background: Surgical site infection prevalence is estimated to be 7.81% in developing and African countries

This problem adds to pre-existing health problems and worsens the cost of care in hospitals must be studied well in any country suffering from extensive health and economic problems. The best method to handle such problem is to prevent it and so the world health organization mentioned six measures to prevent it and of these measures the prophylactic antibiotic use and selection is what concerns us as clinical pharmacists. As different and variable types of infection and susceptibility patterns exist in Egypt, a study evaluating the different antibiotics used for that purpose will aid in improving clinical and economical outcomes.

Method: In this cross-sectional study 69 patients who had orthopedic surgeries in 6 different hospitals in Egyptian Delta area were studied after they matched the inclusion criteria and their medical records were used while maintaining their confidentiality and anonymity. There were 4 prophylactic

antibiotics (Cefazolin, Cefotaxime, Ceftriaxone and Vancomycin) used and a comparative statistical analysis was done

Results: showed that 75% of patients who received Vancomycin developed surgical site infection with statistically significant association (P value <0.001). The highest effective antibiotics with statistically significant association were Cefotaxime followed by Ceftriaxone, where 8.3% and 14.3 developed surgical site infection after orthopedic surgeries, (P value = 0.04 and 0.02) respectively. 25% of patients treated with Cefazolin developed surgical site infection without significant association (p value= 0.515).

Conclusion: This is to say that according to this study, in Egyptian hospitals and among these four antibiotics cefotaxime is the best and vancomycin is the worst antibiotics used in orthopedic surgical site infection prophylaxis

Key words: surgical site infection, antibiotic prophylaxis, vancomycin, cefotaxime.

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