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Evaluation of the Impact of Antibiotic Stewardship Program on Antibiotics Utilization as Surgical Prophylaxis at a Secondary Hospital in United Arab

Emirates

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Background: Overuse or misuse of antibiotics, especially broad-spectrum antibiotics, may result in nosocomial infections, leading to increased mortality rate, extended hospital stay, and cost. The antibiotic stewardship program (ASP) is introduced to combat the irrational use of antibiotics.

Objective: To evaluate the effectiveness of the newly implemented surgical antibiotics prophylaxis (SAP) guidelines.

Materials & Methods: This study was a retrospective, hospital-based study conducted over five years (2017 to 2022), one year before and four years after implementation of ASP at Dibba hospital, United Arab Emirates. The study included adult patients who undergo surgical operations during the study period.

Results: Out of 3290 patients included in the study, 1756 received SAP. The percentage of patients who received SAP improved from pre-ASP 53.6% to 56.7% four years post-ASP. The most frequently used SAP in pre-ASP was amoxicillin with clavulanic acid (decreased from 44% to 0%), in contrast to Cefazolin (increased from 0% to 83%). The appropriate selection of SAP was improved from 42% to 97%, appropriate SAP timing increased from 81% to 98%, appropriate SAP duration was noticeably enhanced from 46% to 98%. The incidence of surgical site infection (SSI) decreased from 34.82% in pre-ASP to 7.99%, 17.91%, 5.40%, and 3.71% in the first, second, third, and fourth post-ASP years, respectively.

Conclusions: Four years Implementation of SAP guidelines have significantly improved the rational use of antibiotics resulting in improved clinical outcomes.

Keywords: antibiotic stewardship program, surgical antibiotic prophylaxis, nosocomial infection, surgical site infection

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