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Effectiveness of Continuing Post-Surgery Antibiotic Prophylaxis in Reducing Nosocomial Infections – A Literature Review

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Abstract
Background: To prevent surgical site infection (SSI), antibiotic prophylaxis is frequently extended for one day or more following surgery. Post-operative, continuing antibiotic prophylaxis may not be advantageous compared to stopping it right away, as it exposes patients to the hazards of taking antibiotics. Although it is routinely recommended, post-procedural prophylaxis is sometimes not necessary. To optimize the effectiveness of antibiotic prophylaxis (AP) in preventing SSIs, healthcare providers should adhere to evidence-based guidelines, such as those provided by the World Health Organization (WHO) or the American Society of Health-System Pharmacists (ASHP). These guidelines provide recommendations on the appropriate selection, timing, and duration of antibiotic prophylaxis for various surgical procedures. In this literature review we looked if the data available support these recommendations.
Methods: We searched PubMed database for articles written between 1st of January 2012 up to 31st of December 2022. We looked at randomized control trials (RCTs) of patients hospitalized in surgical departments, who were given postoperative antibiotic prophylaxis comparing them with those that did not receive it.
Results: Out of a total of 566 randomized control trials, 15 were included in this literature review, totalling 11,728 patients. We found indications that in many cases it makes a significant difference in continuing antibiotic prophylaxis postoperatively. However, in some cases, this will result in a similar incidence of post-surgery nosocomial infections between the intervention and control groups.
Conclusion: While antibiotic prophylaxis is an important strategy to prevent surgical site infections, the decision to extend antibiotic prophylaxis beyond the intraoperative period should be made on a case-by-case basis and led by guidelines.
Key words: antibiotic prophylaxis, nosocomial infections, surgery, pathogens, infections