

# A Comprehensive Analysis of Antimicrobial Agents Used in Surgical Prophylaxis in Clean Case: A Review

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## Abstract

**Introduction:** A global health issue known as antimicrobial resistance (AMR) transcends geopolitical boundaries. Surgical antibiotic prophylaxis (SAP) is the process of administering antimicrobial to treat contagions as a preventative measure, avoid them before, during, and after surgery. During surgery or after surgery there may be chances of acquiring infection. Infection at the surgical site is one such complication known as surgical site infection (SSI). It is one of the problems that reoccur the most frequently in clinical setting. Surgical site infection is described as an infection that develops within thirty days of surgery and might be deep, affecting the organs reached during surgery, or superficial, involving only the skin. SSIs are occasionally the leading cause of death following surgical treatments. So, to reduce these types of complication we use surgical antibiotic prophylaxis.

**Methods:** PubMed, Google Scholar, ResearchGate, and healthcare system evidence were searched from 2005 to 2022 for systemic review that was published in the English language.

**Result:** Data were extracted for all primary outcomes, 38 reviews were included, and review quality was evaluated using AMSTAR 2. The most often reported administration of antibiotic, timing, drug class, and primary result, respectively, were preoperative antibiotic administration, first generation cephalosporin usage, and surgical site infection (SSI). Results indicate that, in comparison to a placebo or no SAP, SAP may, on average, decrease SSIs. The finding showed that postoperative SAP did not differ significantly from intraoperative SAP in reducing SSI.

**Keywords:** Surgical Antibiotic Prophylaxis (SAP), Surgical Site Infections (SSIs), Wound Classification

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