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Abstract

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Abstract

Introduction:

Appropriate perioperative antimicrobial prophylaxis plays a critical role in reducing surgical site infections and ensuring optimal patient outcomes. Current clinical guidelines recommend administering most antibiotic prophylactic doses within 60 minutes prior to surgical incision. For agents requiring prolonged infusion times, administration should be initiated within 120 minutes prior to incision to ensure adequate drug levels at the time of surgery. The primary objective of this study is to evaluate the timing of preoperative antibiotic administration at Mount Sinai Hospital, while also assessing key factors such as antibiotic agent selection per indication, appropriateness of dosing, and intraoperative re-dosing during prolonged procedures.

Methods:

This study is a retrospective electronic medical record review of perioperative antimicrobial prophylaxis in surgical patients. Adult patients undergoing operating room procedures with an indication for preoperative antimicrobial prophylaxis were included. Pregnant patients and takeback surgeries within the same admission were excluded. Baseline demographic data, including hospital length of stay, admission diagnosis, and surgical procedure, was also collected. Following the baseline evaluation, results were summarized and presented to several institutional committees including Surgical Quality, the Pharmacy and Therapeutics Committee, and Antimicrobial Stewardship.

Based on these findings, preoperative antibiotic order sets were revised and approved. Additionally, an advanced preparation report was incorporated into pharmacists' workflow to allow antibiotics to be prepared and available prior to surgery. To evaluate the impact of these changes, the same criteria used in the baseline study are being applied to assess perioperative prophylaxis practices after implementation of updated order sets and enhanced workflow, with analysis focused on descriptive statistics to summarize practices before and after implementation data. IRB was approved under "Evaluation of Perioperative Antibiotic Prophylaxis in Surgical Patients" (MSH-IRB-25-25); Yunhee Jeong as the principal investigator.

Post-Implementation data collection is currently ongoing.