To determine whether intraoperative continuous-infusion (CI) cefazolin reduces the incidence of surgical site infections (SSIs) compared with intermittent (INT) cefazolin dosing...” Shoulders et al (2016).

Abstract:

STUDY OBJECTIVES: To determine whether intraoperative continuous-infusion (CI) cefazolin reduces the incidence of surgical site infections (SSIs) compared with intermittent (INT) cefazolin dosing in patients undergoing coronary artery bypass grafting (CABG) on cardiopulmonary bypass (CPB); safety end points and protocol adherence comparing the two dosing strategies were also explored.

PATIENTS: A total of 516 adults who underwent CABG on CPB and received cefazolin intraoperatively between June 1, 2013, and December 31, 2014, were included. The INT cohort included 284 patients who underwent CABG from June 2013 to February 2014. The CI cohort included 232 patients who underwent CABG from April to December 2014, after an intraoperative CI cefazolin protocol for cardiac surgery patients undergoing CPB was adopted in March 2014.

MEASUREMENTS AND MAIN RESULTS: The primary end point was incidence of SSIs, and safety end points of renal dysfunction and seizures were evaluated. Multivariable logistic regression analysis was used to determine the impact on SSIs when controlling for other risk factors. A subgroup analysis for this study included 2 months within each time period to evaluate protocol adherence. The overall incidence of SSIs was decreased in patients...
Results of continuous-infusion versus intermittent dosing of Cefazolin therapy

receiving CI cefazolin, although this did not reach statistical significance (4.6% in the INT cohort vs 1.7% in the CI cohort, p=0.116). Superficial SSIs were significantly reduced in the CI cohort (2.8% in the INT cohort vs 0.4% in the CI cohort, p=0.039). In the regression analysis, CI cefazolin decreased the odds of SSI by 66%, although it did not reach statistical significance (p=0.077). Safety end points were not significantly different between groups. Overall protocol adherence did not differ significantly between the cohorts: 77% in the INT cohort and 67% in the CI cohort (p=0.212).

CONCLUSION: CI cefazolin significantly decreased the incidence of superficial SSIs compared with INT cefazolin in patients undergoing CABG on CPB, without increasing the risk for adverse effects. As this study was underpowered to detect a significant difference in overall SSIs, larger, randomized studies are required to validate the superiority of CI cefazolin.

Reference:


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