

Does Preoperative Antibiotic Timing Prior to Incision and Drainage Procedures for Severe Odontogenic Infections Affect Length of Stay or Reoperation?

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Background: An odontogenic infection can be a life-threatening medical condition which requires incision and drainage (I&D) in the operating room. Prior to these procedures, many patients are started on antibiotics; however, the effects of the timing of starting the antibiotics prior to surgery is not known.

Methods: The authors conducted a retrospective cohort study consisting of all adult patients treated in the OR with I&D for odontogenic infections from 1/1/2015 to 7/30/2021 at a large, urban academic hospital. The primary predictor variable was preoperative antibiotic timing—the amount of time between when the antibiotic was given before surgery and incision time. The primary outcome variable was the postsurgical length of stay (LOS), and the secondary outcome variable was rate of return to OR. Demographic-, diagnosis-, and treatment-related variables were also analyzed. Multivariable logistic regression was used. A P value of < 0.05 was considered significant.

Results: There were 396 patients included in this study with 51.9% males and an average age of 39.1 years. Amount of time between antibiotic administration and incision time (hours) was not found to be associated with either LOS or reoperation. For every 1 hour increase in time between antibiotic administration and incision time, LOS increased 0.061 days (95% confidence interval = -0.052 to 0.175, P = 0.436). For predicting return to OR, the adjusted odds ratio for time between antibiotic administration and incision time was 0.957 (95% CI = 0.843 to 1.066, P = 0.106) in the adjusted analyses.

Conclusions: There was no association between preoperative antibiotic administration timing and length of stay or rate of reoperation in incision and drainage procedures for odontogenic infections. The lack of association is likely due to the operation being the primary treatment for these infections rather than the antibiotics themselves. More research is needed to determine whether or not the timing of preoperative antibiotics prior to I&D procedures has an effect on outcomes.