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The impact of prophylactic antibiotic duration and stent removal timing on urinary tract infection and complications following radical cystectomy

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Keywords

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Abstract

Introduction

Past studies have demonstrated a reduction in urinary tract infections (UTIs) and urosepsis following radical cystectomy (RC) through the use of prophylactic antibiotics. However, no optimal antibiotic duration has been described. This study sought to assess the impact of antibiotic prophylaxis duration and stent removal timing on rates of post-RC complications and Clostridium difficile infections (CDI).

Methods

Retrospective cohort study comparing patients who underwent RC with ileal conduit diversion before vs. after implementation of the new postoperative (NP) recovery pathway where prophylactic antibiotic duration was shortened to conclude with stent removal. Prior to this, patients were discharged on 30 days of antibiotic prophylaxis. Patient characteristics and outcome measures were identified through NSQIP database and via chart review.

Results

From January 2016 to February 2019, a cohort of 109 patients received the old postoperative (OP) recovery pathway, while a cohort of 50 patients from February 2019 to August 2020 received the NP pathway. Compared to the OP cohort, patients in NP cohort received shorter average duration of prescribed antibiotics (18.60 vs. 27.59, $P<0.01$) and days with stent (15.88 vs. 19.37, $P<0.01$). Rates of postoperative UTIs (10% vs. 6%, $P=0.30$), sepsis (10% vs. 6%, $P=0.30$), and readmissions (14% vs. 7%, $P=0.18$) were greater in the NP pathway group, while rates of septic shock (2% vs. 4%, $P=0.58$) and CDI (0% vs. 4%, $P=0.17$) were higher with the OP pathway, however these differences were not statistically significant. There were no statistically significant differences in average postoperative time until UTI (20.40 vs. 19.83 days, $P= 0.88$).

Conclusion

At a single institution, decreased duration of postoperative antibiotic use to one day post-ureteral stent removal was not associated with statistically significant differences in UTI, sepsis, readmission, or CDI. The study may be limited by inadequate power and outcomes will continue to be tracked.