

Disclosures. All authors: No reported disclosures.

1149. Reducing Piperacillin/Tazobactam Use in Children with Acute Perforated Appendicitis

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Session: 139. Antibiotic Stewardship (Pediatric): Implementation in Hospitals
Friday, October 4, 2019: 12:15 PM

Background. Children with perforated appendicitis have more frequent complications compared with nonperforated appendicitis. Existing data suggest broad-spectrum antibiotics are not superior to narrow-spectrum antibiotics for this condition. In an effort to safely decrease broad-spectrum antibiotic use at our hospital, we evaluated the impact of an antimicrobial stewardship program (ASP) intervention on the use of piperacillin/tazobactam (PT) and clinical outcomes in children with perforated appendicitis.

Methods. Single-center, retrospective cohort study of children ≤ 18 years with perforated appendicitis who underwent primary appendectomy. Children with primary nonoperative management or interval appendectomy were excluded. Prior to the intervention, children at our hospital routinely received PT for perforated appendicitis. An electronic health record (EHR)-integrated guideline that recommended ceftriaxone and metronidazole for perforated appendicitis was released on July 1, 2017 (Figure 1). We compared PT utilization, measured in days of therapy (DOT) per 1,000 patient-days, and clinical outcomes before and after the intervention.

Results. A total of 74 children with perforated appendicitis were identified: 23 during the pre-intervention period (June 1, 2016 to June 30, 2017) and 51 post-intervention (July 1, 2017 to September 30, 2018). Thirty-three patients (45%) were female and the median age was 8 years (IQR: 5–11.75 years). Post-intervention rate of guideline compliance was 84%. PT use decreased from 556 DOT per 1000 patient-days to 131 DOT per 1000 patient-days; incidence rate ratio of 0.24 (95% CI: 0.16–0.35), post-intervention vs. pre-intervention. There was no statistically significant difference in duration of intravenous antibiotics, total antibiotic duration, postoperative length of stay (LOS), total LOS, ED visits/readmission, or surgical site infection (SSI) between pre- and post-intervention periods (Table 1).

Conclusion. An EHR-integrated ASP intervention targeting children with perforated appendicitis resulted in decreased broad-spectrum antibiotic use with no

statistically significant difference in clinical outcomes. Larger, multicenter trials are needed to confirm our findings.

Figure 1. Algorithm for antibiotic selection for acute appendicitis

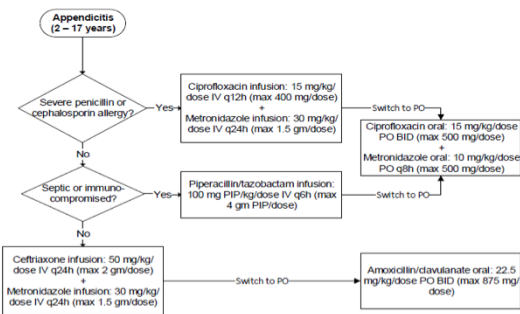


Table 1. Comparison of characteristics and outcomes, before and after the antimicrobial stewardship intervention

Characteristics:	Pre-intervention, N=23	Post-intervention, N=51
Sex (female)	10 (43%)	23 (45%)
Ethnicity (Hispanic)	15 (65%)	24 (47%)
Race		
White	10 (43%)	21 (41%)
Asian	2 (9%)	7 (14%)
Black	0	1 (2%)
Other	11 (48%)	22 (43%)
Age (mean, 95% CI)	8.5 (6.7 – 10.3)	8.3 (7.1 – 9.5)
Immunocompromised	3 (13%)	1 (2%)
Intraoperative findings:		
Diffuse purulence	7 (30%)	15 (29%)
Abscess	9 (39%)	15 (29%)
Extraluminal fecalith	1 (4%)	5 (10%)
Outcomes:	Pre-intervention, N=23	Post-intervention, N=51
Piperacillin/tazobactam days/1000 patient days*	556	131
Length of intravenous antibiotics (mean, 95% CI) in days	5.8 (4.6 – 7.1)	5 (4.2 – 5.9)
Total length of antibiotic therapy (mean, 95% CI) in days	10.7 (9.2 – 12.1)	9.5 (8.4 – 10.6)
LOS after surgery (mean, 95% CI), in days	6.4 (5.2 – 7.6)	6 (4.9 – 7)
Total LOS (mean, 95% CI), in days	6.6 (5.4 – 7.7)	6.4 (5.2 – 7.6)
ED visits/readmissions	2 (9%)	7 (14%)
ED visits	1 (4%)	1 (2%)
Readmission	1 (4%)	6 (12%)
Surgical Site Infection	1 (4%)	6 (12%)

ED; emergency department, LOS; length of stay
* p < 0.05

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1150. Evaluating the Impact of Antibiotic Prophylaxis on the Microbiology and Incidence of Ventriculitis in Patients with External Ventricular Drains

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Session: 140. HAI, Device-Associated: Other Devices
Friday, October 4, 2019: 12:15 PM

Background. External ventricular drains (EVDs) are frequently used in acute brain injuries for continuous intracranial pressure monitoring and cerebrospinal (CSF) fluid diversion. EVDs are associated with a 0–22% risk of ventriculitis. The evidence for antibiotic prophylaxis (AP) for ventriculitis prevention is not robust. This study aimed to delineate the incidence of EVD-related ventriculitis and causative organisms in patients receiving AP.

Methods. A retrospective chart review from 2013 to 2018 at Yale New Haven Hospital was performed. Patients were included if ≥ 18 years of age, admitted to the neurosciences intensive care unit (ICU), and had AP with cefazolin, vancomycin, sulfamethoxazole/trimethoprim, or clindamycin. Patients were excluded if they had a diagnosis of meningitis or ventriculitis prior to EVD placement, on multiple agents for AP, on antibiotics for indications other than AP, CSF leak, or skull fracture. The primary endpoint was the incidence of ventriculitis per 1,000 EVD-days. Secondary endpoints were causative organisms of ventriculitis, EVD duration, ICU length of stay (LOS), hospital LOS, and 30-day mortality.

Results. Five hundred ninety-nine patients were reviewed and 249 patients were included. Baseline demographics are noted in Table 1. Cefazolin was the most common agent for AP (98%). There were 7 cases of ventriculitis with an incidence rate of 2.8% (4 infections per 1000 EVD-days). All of the causative organisms were resistant to the