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Antibiotic Monotherapy vs Dual-Drug Therapy in Perforated Appendicitis: Single Center Retrospective Review

Shai Stewart MD

Children's Mercy Hospital

Nelimar Cruz-Centeno

Children's Mercy Kansas City

Derek Marlor

Children's Mercy Kansas City

Dae H. Kim

Children's Mercy Kansas City

Shawn D. St Peter

Children's Mercy Hospital

See next page for additional authors

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Submitting/Presenting Author

Shai Stewart MD, Nelimar Cruz-Centeno, Derek Marlor, Dae H. Kim, Shawn D. St Peter, and Tolulope A. Oyetunji MD MPH

Antibiotic Monotherapy vs Dual-Drug Therapy in Perforated Appendicitis: Single Center Retrospective Review

Shai Stewart MD, Nelimar Cruz-Centeno MD, Derek R Marlor MD, Dae H Kim BS, Shawn D St. Peter MD, Tolulope A Oyetunji MD MPH

Children's Mercy Kansas City; Kansas City University College of Osteopathic Medicine

Background

- While the surgical approach to acute appendicitis with perforation is well defined, the optimal choice of antibiotic therapy, duration and route of administration has been studied for decades.
- There is no consensus on the optimal antibiotic regimen in perforated appendicitis.
- We aimed to evaluate the outcomes of patients with perforated appendicitis when treated with Piperacillin-Tazobactam (PT) monotherapy versus Ceftriaxone and Metronidazole (CM) dual drug therapy.

Methods

- Retrospective review of children <18 years old with perforated appendicitis was conducted at a free-standing pediatric hospital. The primary comparison was 30-day postoperative IAA formation.
- We hypothesized there is no difference in the rate of intra-abdominal abscess (IAA) formation in our center.

Results

Table 1. Outcomes by antibiotic administration

	Ceftriaxone & Metronidazole (n=77)	Piperacillin-Tazobactam (n=40)	P
Intra-abdominal abscess, % (n)	13% (10)	20% (8)	0.32
Emergency room visits	14.3% (11)	27.5% (11)	0.08
Readmissions	9.1% (7)	12.5% (5)	0.56
Median post-op length of stay, [IQR]*	3.2 [3.1, 3.8]	3.3 [3.1, 4.0]	0.11
Intravenous antibiotic duration, [IQR]	3.2 [3.1, 3.8]	3.3 [3.1, 3.5]	0.2
Wound complications	3.9% (3)	5% (2)	0.78

Table 2. Multivariate regression analysis

	Odds Ratio (P)	95% Confidence Interval
Age	1.14 (0.53)	0.753-1.733
Body mass index	1.00 (0.65)	0.973-1.045
Symptom duration	1.82 (0.49)	0.338-9.798
IV antibiotic duration	1.07 (0.84)	0.526-2.192
Antibiotic choice	1.78 (0.21)	0.72-4.40
Antibiotic crossover	0.71 (0.92)	0.0006-818.6
Uninsured	1.49 (0.92)	0.0004-4923.4

Conclusions

- This retrospective study suggests that our postoperative dual-drug antibiotic regimen of Ceftriaxone & Metronidazole (CM) is at least equivalent to broad-spectrum, single-drug therapy with Piperacillin-Tazobactam with regards to Intra abdominal Abscess formation, post-operative ED visits, total hospital length of stay and wound complications.
- Since CM is dosed once daily, is more economical and provides equivalent results, this antibiotic choice will remain the standard of care at our institution.