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Does the initial antibiotic choice affect the incidence of post-operative collections in paediatric appendicitis?

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Abstract

Introduction: In appendicitis, antibiotics are routinely commenced prior to consideration of operative management. The choice of initial regimen depends on local antimicrobial guidelines. The presence of resistant organisms risks development of post-operative collections.

In our tertiary paediatric surgery unit, antimicrobial guidelines were changed in September 2022 to recommend co-amoxiclav instead of cefuroxime/metronidazole. This study compares incidence of post-operative collections before and after the policy change.

Method: Patients who underwent appendicectomy between September 2021 and October 2023 were identified and contemporaneous data collected. Patients who had initial surgery elsewhere, interval/incidental appendicectomies or penicillin allergy were excluded. Comparison was made between patients receiving cefuroxime/metronidazole (Group 1) or co-amoxiclav (Group 2).

Results: Over the 26-month period, there were 104 patients in Group 1 (after excluding 47) and 104 in Group 2 (after excluding 46). 4 (3.8%) developed collections in Group 1 versus 13 (12.5%) in Group 2. In Group 1, 2 (50%) were treated with antibiotics alone, 1 (25%) required drain insertion and 1 (25%) had a laparotomy. In Group 2, 7 (54%) were treated with antibiotics alone, 5 (38%) required drain insertion and 1 (8%) had a laparotomy. The relative risk of developing a post-operative collection was 3.3 ($p=0.023$) in Group 2 versus Group 1.

Conclusion: The change in antimicrobial policy resulted in a significant increase in post-operative collections in our unit. This provides evidence that a regimen of cefuroxime/metronidazole is more effective at preventing collections and we are liaising with our Microbiology department with a view to amend the guidelines.