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10-2021

Perioperative Antibiotic Use in Neonatal General Surgery: a Survey of APSA Membership

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Original Research

Presentation Type: Virtual Poster

Session: Section on Surgery Program

Perioperative Antibiotic Use in Neonatal General Surgery: A Survey of APSA Membership

Background: Surgical site infections (SSIs) are a significant source of perioperative morbidity. There is limited data regarding antibiotic prophylaxis in pediatrics, and there are no standardized guidelines in neonates. Thus, peri-operative antibiotic use is based on surgeon experience and preference. To explore this knowledge gap, we sought to describe the practice patterns of pediatric surgeons with regard to antibiotic prophylaxis for SSIs in neonatal surgery

Methods: A survey was distributed to the American Pediatric Surgical Association (APSA). Members were asked to respond to 6 hypothetical case scenarios: Tracheoesophageal fistula/Esophageal atresia, Hirschsprung's disease, Gastroschisis, Congenital diaphragmatic hernia repair, Neonatal intestinal obstruction (malrotation with volvulus), and Intestinal atresia type 1. Our questions focused on antibiotic initiation timing, the type of antibiotics used, and the duration of the antibiotic therapy. Responses were analyzed using chi-square with pair-wise comparison

Results: The survey was distributed to 1271 members, and results were analyzed based on 156 responses. The majority of the respondents practiced in academic or academic affiliated centers and were a median of 12 years out in practice. Overall, we identified areas of consensus, as well as areas where significant variation exists (Figure 1). For example, in gastroschisis, most would initiate antibiotics at the time of silo placement (73%) and continue until definitive closure (87.8%), but there was no consensus on the type of antibiotics administered. In other scenarios, such as tracheoesophageal fistula, 54% would initiate antibiotics less than one hour before surgery, but 40% would start them at the time of diagnosis. Post-operatively, 59% would continue antibiotics, but there was no consensus on the duration; only 42% would continue those antibiotics for less than 24 hours. These differences were also significant when stratified by hospital type and region. Across all scenarios, most respondents would start antibiotics within one hour of skin incision. Cephalosporin was the most common pre-operative antibiotic type chosen. Depending on the case scenario, respondents also favored either a two-drug combination or a single, broad-spectrum antibiotic (Figure 2). Hospital type, years out of practice, membership status, and region were also found to be associated with significant differences in responses to other scenarios.

Conclusion: This survey revealed areas of consensus as well as significant variations in practice with regards to perioperative antibiotic use in neonatal surgery. This study highlights the necessity for standardized guidelines in the use of peri-operative antibiotics in neonates. Robust data about SSIs and peri-antibiotic use in neonates is needed to help develop such guidelines.

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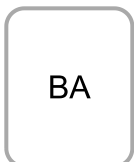
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