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[2863.499] Evaluating the Duration of Post-Operative Cefuroxime Prophylaxis on Infectious Outcomes in Pediatric Cardiovascular Surgery Patients

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BACKGROUND: Use of antimicrobials for prevention of surgical site infections after cardiac surgery is standard of care for adults and children, although practice variations exist in children with respect to optimal duration of prophylaxis. Despite recommendations to continue antibiotic prophylaxis for 24 to 72 hours after cardiac surgery, use of extended post-operative prophylaxis in children remains common.

OBJECTIVE: To evaluate differences in infectious outcomes in children after cardiac surgery who received unlimited post-operative cefuroxime prophylaxis and those who received cefuroxime prophylaxis for a period of only 24 hours after surgery.

DESIGN/METHODS: This was a retrospective study of children who had undergone cardiac surgery from February 2006 through January 2007. This time period represented six months prior to and after implementation of a change to a standard 24 hour duration of post-surgical cefuroxime prophylaxis. Patients in each time period (pre and post intervention) were categorized into two major infectious outcome groups based on whether or not they required additional treatment courses of antibiotics beyond cefuroxime prophylaxis.

RESULTS: Two hundred and twelve children (103 pre-intervention and 109 post-intervention) met inclusion criteria. Additional antibiotics were initiated in 19 (18.4%) and 29 (26.6%) of patients in the pre and post-intervention groups, respectively ($p = 0.156$). Of these, documented bacterial infection (bacteremia, urinary tract infection, endocarditis, sepsis) occurred in 8 (42.1%) and 14 (48.3%) in the pre and post-intervention groups, respectively ($p = 0.675$). As expected, prophylactic cefuroxime was continued for a greater mean duration in the pre-intervention group (4.1 ± 3.3 vs. 1.2 ± 0.5 days, $p < 0.005$).

CONCLUSIONS: Prolonged exposure to antibiotics contributes to development of antibiotic resistance in surrounding flora both immediately and upon later admissions. Since many cardiac procedures in children are staged over multiple admissions, the development of resistant organisms is a valid concern. Limiting the duration of cefuroxime prophylaxis to 24 hours after pediatric cardiac surgery does not appear to increase infectious outcomes or true post-operative infections. Our results underscore the need to develop standard prophylactic antibiotic regimens in institutions currently utilizing prolonged prophylaxis after pediatric cardiac surgery.

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Presentation Time: 4:00 PM

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