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Introduction: The perioperative administration of antibiotics is an important strategy to limit the risk of surgical site infections. For the majority of surgical procedures cephalosporin prophylaxis is recommended.¹ However, issues arise when patients present with a history of penicillin allergy. It is commonly taught that there is cross sensitivity and risk of allergic reactions of 10% between penicillins and cephalosporins. Although this has been accepted in practice, it has recently been refuted in the literature.²⁻³ Preliminary results have been presented. We are pleased to report the final and complete observations.

Methods: Results from a retrospective review of anesthesia records compiled from the past 3 years of anesthesia practice at Nationwide Children's Hospital in Columbus, Ohio, are reported. Patients with a history of penicillin allergy undergoing subsequent surgery were studied. The choice of antibiotic prophylaxis was recorded, and adverse effects were noted. Some patients scheduled for ventriculoperitoneal shunt were excluded, as they primarily receive vancomycin prophylaxis in this institution. The incidence of cross-allergic reactions and complications are reported as percentages. Demographic data is included.

Results: 1428 surgical patients were initially recognized as registered penicillin, or penicillin family, allergic. 513 patients were specifically identified to require intraoperative antibiotic administration totaling 624 distinct surgical cases. There were 263 boys and 250 girls. There were 50 patients in the 0-5 years of age group, 75 patients in 6-10 years old, and 388 patients > 11 years of age. For 153 cases, cephalosporins were administered. Cefazolin was used in 127 of these cases, or 20% of all cases. Only one patient had a documented antibiotic reaction, which consisted of skin erythema, or 0.6% cross- reactivity. No cases of anaphylactic reactions were identified. The most frequently administered non-cephalosporin antibiotic was clindamycin, accounting for 387 cases. In this group there were 8 reported allergic reactions, representing 2% of patients treated. In 413 cases antibiotics were administered in an average time of 18 minutes prior to incision, or 66% of cases. In 90 cases the antibiotics were administered an average of 13 minutes post incision, or 14% of all cases. In the remaining 58 cases, patients received antibiotics in the OR, but the procedures did not require incision time documentation.

Conclusions: In this institution the cross reactivity between penicillin and cephalosporins was 0.6%, which is much lower than the reported 10%. Based on this experience, but taking into consideration our small cohort and the types of allergic reactions observed, the use of cephalosporins remains recommended. Of course, cases of reported anaphylaxis or severe reactions must be excluded.

References

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