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Does penicillin allergy increase the risk of surgical site infection after cesarean?
Original research

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Introduction or statement of problem: Penicillin allergy is the most common drug allergy in the United States, with a reported prevalence of 10-20%. The effects of penicillin allergy on surgical site infection have been studied in many surgical procedures; however, minimal research has been done with regards to obstetric populations. This is surprising as Cesarean delivery is one of the most common surgeries in the United States and carries a high risk of surgical site infection (2-19%). The purpose of this study is to examine the relationship between documented penicillin allergy and cesarean delivery surgical site infection.

Hypothesis: We hypothesize that patients with a documented β-lactam allergy will have increased odds of developing a surgical site infection compared to those who do not have a β-lactam allergy.

Methods/design: We conducted a retrospective cohort analysis. Primary exposure was documented β-lactam allergy and secondary exposure was perioperative antibiotic received. The primary outcome was the prevalence of surgical site infection. Maternal characteristics were stratified by the presence or absence of a documented β-lactam allergy using Pearson’s Chi-squared test for categorical variables and t-test for continuous variables. A logistic regression model estimated odds of surgical site infection after adjusting for possible confounders.

Results: Of the 12,954 women included, 929 (7.2%) had a documented β-lactam allergy. Among those women, 595 (64.1%) received non-β-lactam prophylaxis. SSI occurred in 38 (4.1%) of women who had a β-lactam allergy versus 238 (1.9%) who did not (p = <0.001). β-lactam allergy was associated with higher odds of surgical site infection compared to no allergy ([aOR] = 1.93; 95% [CI] = 1.21-3.06; p = 0.005).

Conclusions: The presence of a β-lactam allergy is associated with increased odds of developing a cesarean delivery surgical site infection after controlling for possible confounders including type of perioperative antibiotic received.