2194. The Impact of a Reported Penicillin Allergy on Surgical Site Infection Risk

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Background. A reported penicillin allergy may compromise receipt of recommended antibiotic prophylaxis intended to prevent surgical site infections (SSI). Most patients with a reported penicillin allergy are not allergic, and would tolerate recommended cephalosporin prophylaxis. Our objective was to determine the impact of a reported penicillin allergy on the development of SSIs.

Methods. In this retrospective cohort study of patients who underwent hip arthroplasty, knee arthroplasty, hysterecomy, colon surgery, or coronary artery bypass grafting (CABG) from 2013 through 2014 at Massachusetts General Hospital, we compared patients with and without a reported penicillin allergy. The primary outcome was a SSI, as defined by the Centers for Disease Control and Prevention’s National Healthcare Safety Network. The secondary outcome was perioperative antibiotic use.

Results. Of 8,385 patients who underwent 9,084 procedures, 922 (11%) reported a penicillin allergy and 241 (2.7%) had a SSI. In multivariable logistic regression analysis, patients reporting a penicillin allergy had a 1.51 (1.02, 2.22) increased odds of developing a SSI. Penicillin allergy reporters were administered less cefazolin (12% vs 49%, p < 0.001) and more clindamycin (49% vs 3%, P < 0.001), vancomycin (35% vs 3%, P < 0.001), and gentamicin (24% vs 3%, P < 0.001) compared with those without a reported penicillin allergy (Figure). The increased SSI risk among patients reporting penicillin allergy was mediated by the patients’ receipt of a alternative perioperative antibiotic use.

Conclusion. Patients with a reported penicillin allergy had a 50% increased odds of SSI, attributable to the receipt of second-line perioperative antibiotics. Clarification of penicillin allergies as part of routine preoperative care may decrease SSI risk.

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