

Clinical Communications

Impact of persistent β -lactam allergy documentation despite delabeling in the perioperative setting

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Clinical Implications

- Despite formal β -lactam delabeling, communication failure and false patient perception at the time of surgery can lead to the use of suboptimal perioperative antibiotics.

TO THE EDITOR:

β -Lactams are optimal and safe choices for perioperative antibiotic prophylaxis.¹ Hospital electronic medical records (EMRs) often contain unsubstantiated patient reports of penicillin allergies.² Thus, the verified and accurate documentation of a suspected β -lactam allergy can be a critical component of patient management. The preoperative evaluation of suspected β -lactam allergy has 2 objectives: first, to identify those at high risk of anaphylaxis, and second, to identify patients who carry a false β -lactam allergy label. Both positive and negative skin testing and/or oral drug provocation results should be documented in the EMR instantly. The aim on the one hand is to avoid perioperative IgE-mediated anaphylaxis and on the other hand, to provide those falsely labeled with optimal antibiotics. Unfortunately, in β -lactam delabeling of hospitalized patients, the drug allergy status is not always consistently updated for those delabeled on readmission.³ Ideally, EMR documentation of delabeling should be transparent and up to date.

In January 2015, as part of an antibiotic stewardship initiative, the Division of Allergy and Clinical Immunology at the McGill University Health Center established policies and guidelines to standardize drug allergy testing. The institutional guidelines specified that cefazolin was the first choice in prophylactic intraoperative antibiotics. In cases of suspected β -lactam allergy, vancomycin and clindamycin were the prescribed alternatives despite the major drawbacks associated with these drugs. To reduce the use of alternative second-line drug choices, we attempted to identify individuals falsely labeled as allergic to β -lactam before their surgery at their scheduled preoperative visit. The preoperative staff was engaged to facilitate the process, and patients were evaluated in the allergy unit during their scheduled preoperative assessment visit. Experienced allergy personnel performed the clinical evaluations and testing. Results of the skin testing and provocation tests with penicillin or ampicillin were entered in the patient EMR along with the allergist's written report, which was also sent to the preoperative clinic. Once delabeled, patients were told they could take any β -lactam antibiotic.

On institutional review board approval, we undertook a study to assess β -lactam allergy delabeling in the perioperative setting. From April 1, 2015, to March 31, 2017, using operative reports, EMRs, and pharmacy records, we documented the antibiotic chosen and administered by the surgical team after the β -lactam allergy delabeling. The study results as well as the materials and methods used for delabeling were recently reported.⁴ We were able to delabel 184 of 194 patients, yet many of the delabeled patients (33 of 184 [18%]) received antibiotics, not in keeping with our institutional guidelines and contrary to the allergist's recommendations.

We herein report on the reasons for the noncompliance in prophylactic antibiotic use. Specifically, we contacted patients and surgical staff to review each case of noncompliance in choice of antibiotic. We verified whether the allergy assessment forms were completed in accordance with our standard procedures. We recorded the date the reports were sent, the date the reports were received, and whether the report was available in the EMR before the scheduled surgery.

Among the 194 patients studied, 10 individuals were allergic to penicillin, whereas 184 patients were delabeled. Two of the patients with penicillin allergy were erroneously administered cefazolin instead of a non- β -lactam antibiotic, yet experienced no adverse events.⁴ Among the 184 delabeled individuals, 33 were given either vancomycin or clindamycin instead of cefazolin. We noted reporting delays in 12 (36.4%) of these patients, because the allergy assessment letter reporting the negative test results and the allergist's opinion was scanned into the EMR after the surgery. In 6 cases, no clear reason was found to justify why a β -lactam was avoided because the EMR had been updated with the allergy screening report before surgery. In the remaining 15 cases (45%), notwithstanding the EMR documentation of the delabeled allergy, at the time of surgery patients continued to state that they were allergic to penicillin. The records also documented that these patients had been informed of their negative drug allergy status by the evaluating allergist. Twelve of the 15 patients were successfully contacted by telephone. Two were elderly with cognitive dysfunction, 6 were not convinced of the accuracy of the testing and delabeled status, and the remainder had poor recollection of events at the time of their surgery including their responses to questions regarding drug allergies.

Our study noted the need for both clear documentation and better patient understanding of drug allergy delabeling. We found that one-third of the patients who received suboptimal antibiotics for perioperative prophylaxis did so because of a delay in updating the EMR using scanned reports. Real-time digital EMR entry was subsequently put into place to rectify the problem. It has been shown that the accuracy and clarity of the transmitted documents to all health care providers along the perioperative pathway play a pivotal role in the prevention of adverse patient outcomes.⁵

Notwithstanding our attempts to optimize the β -lactam delabeling pathway, in 15 cases our antibiotic guidelines were not followed because patients continued to claim that they were allergic to β -lactam at the time of entry to the operative theater. Our institution uses a "sign in" sheet based on World Health Organization guidelines for safe surgery.⁶ It is routinely

completed at the point-of-entry for surgery and patients are asked one final time whether they are allergic to any medication. If the patient had not been properly informed, did not understand the results of testing, or lacked confidence in having been delabeled, their falsely perceived positive β -lactam allergy status would supersede previous documentation. Our findings highlight the importance of ensuring that patients clearly understand the implications of their negative testing and β -lactam delabeling for both their planned surgery and future medical encounters.

Patient engagement in health care is important.⁷ In addition to the result of the allergy testing outcome, information on the risks and benefits of having a β -lactam allergy label must be provided. Posttest counseling by the allergy team and social media tools or on-site preoperative instructional videos are some options that may improve patient understanding and assist in delabeling.

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