Coallier S, Mitchell R, Anderson AM, Dumkow LE, Wolf LM. FULL DOSE CHALLENGE OF MODERATE, SEVERE, AND UNKNOWN BETA-LACTAM ALLERGIES IN THE EMERGENCY DEPARTMENT. *SMRJ*. 2024;9(2):104. doi:10.51894/001c.122800

Research Symposium

FULL DOSE CHALLENGE OF MODERATE, SEVERE, AND UNKNOWN BETA-LACTAM ALLERGIES IN THE EMERGENCY DEPARTMENT

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https://doi.org/10.51894/001c.122800

Spartan Medical Research Journal

Vol. 9, Issue 2, 2024

04

BACKGROUND

Penicillin is the most commonly reported drug class allergy. Reported penicillin allergies often lead to avoidance of both penicillin and beta-lactam antibiotics due to fear of cross-reactivity. Cross-reactivity may be primarily driven by the molecule's R1 side chain, rather than the beta-lactam ring, supporting challenging documented allergies with antibiotics with dissimilar side chains. Challenging mild allergies with full dose beta-lactam antibiotics has arisen as a practical approach to identify the safe use of beta-lactam antibiotics, however, no current data exists evaluating full dose beta-lactam allergy challenges in ED patients with moderate, severe, or unknown beta-lactam allergies.

OBJECTIVE

This study aims to assess the outcome of challenging documented moderate, severe, or unknown beta-lactam allergies with full-dose administration of a beta-lactam antibiotic in Emergency Department (ED) patients admitted for acute bacterial infection.

METHODS

A single center, retrospective, descriptive study of adult patients challenged with full dose beta-lactam in the ED from January 2021 to December 2022 was conducted. Included patients had at least one documented moderate, severe, or unknown beta-lactam allergy in the electronic medical record without documentation of prior tolerance. Patient demographics, prior beta-lactam antibiotic reaction, beta-lactam administered in the ED, inpatient beta-lactam continuation, adverse drug reactions, and updates to allergy profiles were collected. Descriptive statistics for data analysis were performed using SPSS version 22.

RESULTS

Of the 184 ED encounters with full dose beta-lactam challenges, 5 (2.7%) of the patients with documented moderate, severe, or unknown beta-lactam allergies experienced an allergic reaction after the challenge; 1 (0.5%) patient had an allergic reaction in the ED, the remaining 4 (2.2%) occurred after admission. No anaphylactic reactions occurred. All allergic reactions were limited to mild rash or itching. Most patients (98.9%) were challenged with a cephalosporin. The beta-lactam administered in the ED was continued in 86.4% of cases, and the allergy profile was updated for future utilization in 73.4% of patients.

CONCLUSIONS

This study suggests that full dose challenge of moderate, severe, or unknown beta-lactam allergies can be safely accomplished in the ED. This approach avoids unnecessary penicillin allergy skin testing and reduces utilization of suboptimal alternative antibiotic regimens.

Submitted: July 15, 2024 EDT. Accepted: July 31, 2024 EDT.
Published: August 30, 2024 EDT.