



Creating a new team to combat an old issue- A proposed solution to erroneous Penicillin allergy labeling

Barbara Lam MD, Ryan Eid MD, Gila Kriegel MD, Qura Rashid MD

Beth Israel Deaconess Medical Center Department of Medicine, Divisions of Allergy and Inflammation, and Infectious Diseases.

TAP TO GO BACK
TO KIOSK MENU

Introduction

- Penicillins are the most commonly prescribed antibiotics and penicillin allergy is among the most commonly listed allergy.
- 32 million people in the United States – 10% of the population – have a documented penicillin allergy.
- 95% of individuals with a documented penicillin allergy are able to tolerate penicillin after challenge due to the following reasons:
 1. IgE-mediated penicillin allergy wanes over time with 80% of patients tolerant after 10 years
 2. Many patients were never allergic and their symptom was likely secondary to another cause, such as their concomitant infection
- Patients with documented penicillin allergies may suffer adverse side effects from alternative antibiotics.
- “De-labeling” patient allergies can reduce unwanted side effects, improve antibiotic resistance patterns, and save healthcare dollars, but it has been difficult to implement at scale.

Aim

1. Identify percent of patients at a large primary care practice with documented penicillin allergy.
2. Identify barriers to penicillin allergy “de-labeling.”
3. Promote and educate primary care providers on the importance of penicillin allergy evaluation.
4. Leverage the electronic health record to identify patients who would benefit from penicillin allergy testing so that it becomes a routine part of the primary care visit.

The Team

- Barbara Lam, MD
- Ryan Eid, MD
- Gila Kriegel, MD
- Qura Rashid, MD

Proposed Intervention

- A detailed allergy history can help risk-stratify patients but this history may be unfamiliar to some primary care providers.
- Dedicated Penicillin Allergy Evaluation Teams (PAETs) led by primary care providers in collaboration with an allergist can be an effective tool in delivering this care.
- Shared decision-making between members of PAETs and allergists regarding risk stratification screening of penicillin allergy can streamline decision-making and empower primary care providers.
- We can leverage electronic health record reminders for automatic referral of these patients to PAETs for evaluation.

	Low Risk	Medium Risk	High Risk
History^a	Isolated reactions that are unlikely allergic (eg, gastrointestinal symptoms, headaches) Pruritus without rash Remote (>10 y) unknown reactions without features of IgE ^b Family history of penicillin allergy	Urticaria or other pruritic rashes Reactions with features of IgE but not anaphylaxis ^b	Anaphylactic symptoms ^c Positive skin testing Recurrent reactions Reactions to multiple β-lactam antibiotics
Action	Prescribe amoxicillin course or perform a direct amoxicillin challenge under observation. ^d	Skin test followed by amoxicillin challenge under observation if the skin test is negative. ^e Consider allergy/immunology referral.	Allergy/immunology referral or desensitization.

^a No penicillin allergy testing should be performed on patients with possible penicillin-associated severe cutaneous adverse reaction, hemolytic anemia, organ-specific reaction, drug fever, or serum sickness. Patients with unstable or compromised hemodynamic or respiratory status and pregnant patients should never be considered low risk.

^b IgE features classically include cutaneous symptoms, such as itching, flushing, urticaria, and angioedema, but also involve respiratory system (rhinitis, wheezing, shortness of breath, bronchospasm), cardiovascular system (arrhythmia, syncope, chest tightness), and gastrointestinal system (abdominal pain, nausea, vomiting, diarrhea) symptoms.

^c The most severe IgE-mediated reaction is anaphylaxis (eFigure 1 in Supplement 1). Allergy/immunology consultation is advised.

^d Considering patient comfort level with trying penicillin again and whether resources exist for observation.

^e If skin testing is not possible, a graded amoxicillin challenge can be considered for medium-risk histories. A graded challenge often requires administration of a one-tenth to one-fourth full dose of the desired drug and a 30- to 60-minute period of monitoring followed by administration of a full dose of the desired drug and a final 30- to 60-minute period of monitoring (Toolkit C in Supplement 2).

Risk Stratification for Penicillin Allergy Evaluation. JAMA. 2019;321(2):188-199. doi:10.1001/jama.2018.19283
Identifying opportunities in EHR to improve the quality of antibiotic allergy data. JAMIA. 2016;23:e108-e112. doi:10.1093/jamia/ocv139

For more information, contact:
The authors above @bidmc.harvard.edu