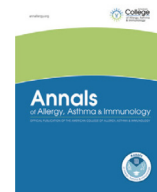




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Editorial

Penicillin delabeling

Ready for pediatric primary care



Penicillin allergy delabeling has undergone a renaissance in recent years. In the years after the return to the market of benzylpenicilloyl polylysine for skin testing in 2009, there have been local, national, and international campaigns to educate clinicians and the public on the large number of individuals inappropriately labeled as penicillin allergic. With a careful clinical history, many patients with a penicillin allergy label can be classified as “low risk,” indicating their risk of having anaphylaxis or a severe cutaneous reaction is low. On the basis of accumulating evidence in patients at low risk that skin testing may be unnecessary before performing an oral drug challenge, this strategy was suggested to the medical community at large through the publication of a toolkit in the *Journal of the American Medical Association* in 2019.¹ In that publication, the authors recommended the application of a delabeling strategy in the primary care clinic setting. This strategy has a particular advantage for pediatric patients because childhood is a common time for a penicillin allergy label to be applied, and for these patients, skin prick and intradermal testing can be challenging. Subsequently to the publication of the toolkit, a large study was published in 2021 that reported on amoxicillin oral challenges in more than 1900 children with a history of low risk symptoms surrounding a course of penicillin. No skin testing was performed before the challenge, and the results were reassuring: 2.2% had mild immediate reactions, and 3.2% had mild nonimmediate reactions.² This study showed that in most children with cutaneous symptoms that surround a treatment with amoxicillin, a simple graded challenge can be safely performed. Considering the accumulated evidence, in 2022, the updated Drug Allergy Practice Parameter recommended against penicillin skin testing in pediatric patients at low risk, and in favor of being proactive about penicillin allergy delabeling.³

Although there have been inpatient protocols established at centers where nonallergists have been trained to examine patients labeled allergic and even to perform penicillin skin testing to help guide antibiotic therapy, in the outpatient setting, the patients are usually referred to an allergy clinic for examination, whether in practice or during clinical research. In this issue of the *Annals of Allergy, Asthma & Immunology*, Dr Chow et al advance the clinical research on penicillin delabeling to an outpatient pediatric primary care clinic setting.⁴ The allergists in the study collaborated with pediatricians to formulate a protocol in which the pediatricians screened patients, identified those at low risk, and then performed a graded challenge

on those children with a total of 250 mg of amoxicillin in their pediatric clinic. The protocol excluded children with any possibility of severe cutaneous reaction to the index drug taken but otherwise accepted all other index reaction histories. Conveniently, the pediatricians used the 60-minute observation period to accomplish a routine healthcare visit. Of 112 children 2 to 17 years of age who were screened over the course of 10 months, 86 were found eligible for challenge. Of those 86 eligible children, 23 eventually proceeded to the amoxicillin challenge, with 2 patients having mild cutaneous reactions, 1 immediate and 1 delayed (both were nonurticarial). All symptoms resolved with antihistamines. Sixty-three children did not complete a challenge owing to logistical difficulty and families' lack of interest during follow-up.

This study shows a safe and viable penicillin allergy delabeling protocol can be implemented in a pediatric primary care clinic. The number of US children labeled with a penicillin allergy exceeds the capabilities of allergy clinics to examine them. Using rounded estimates of 70 million children in the United States,⁵ 6000 active full-time allergists, and a rate of reported penicillin allergy of 10%,³ each allergist would need to evaluate 4 to 5 children labeled allergic, each weekday of 1 year, assuming equal access to specialty care. If pediatric clinics embrace outpatient delabeling protocols, access will expand significantly. A barrier to delabeling in the primary care clinic is the perception of risk. A busy primary care clinic does not have time or resources to spare to treat acute allergic reactions. Thankfully, the data indicate most children can successfully be delabeled with minimal risk for adverse effect, rarely a mild cutaneous reaction, as reported this month by Chow et al.⁴

As a practical point, it is important to consider the completion rate of this study. The percentage of eligible children completing the protocol was low (27%), which reflects the competing priorities in the lives of the involved families because the dropouts were due to lack of interest at time of screening or later when the challenge was scheduled. An interesting comparison is a recent study that screened pediatric patients in an emergency department setting, and 72% of patients at low risk and eligible consented to challenge during the visit.⁶ Although the difference between these 2 scenarios is significant, if a pediatric clinic successfully sets up a routine screening protocol in which each child has multiple opportunities to be screened and challenged, this difference is likely to decrease.

As penicillin delabeling continues to evolve, the story is likely to mirror that of children with a history of egg allergy who receive the influenza vaccination. Although we used to perform skin testing on those children to evaluate whether they could be vaccinated, thanks to practice-changing clinical research, most of those children are now safely vaccinated in their pediatric primary care clinics without need for allergy testing or referral.⁷ Although allergists will continue

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to play an important role in the examination of patients with drug allergies, pursuing low-risk penicillin delabeling strategies in the primary care outpatient setting is the best way to reach the largest number of patients with the most common labeled drug allergy.

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