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Soapbox: Health

Penicillin allergy? Think again.

Failure to test for reaction to drug leaves most people mislabeled

By Emily DeMarco 7:00am, December 11, 2016 Citations



RASH CALL Red bumps in childhood can be mistakenly identified as a penicillin allergy. In later years, clinicians don't verify the diagnosis, with potential consequences for both the individual and society.

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Rashes are the temporary tattoos of childhood. The prickly, red bumps can blossom across the skin for a host of reasons: an ear infection, a virus or even an allergic reaction to a penicillin antibiotic. What's hard to tell, though, is whether the penicillin or the illness itself triggers the rash. To be safe, doctors label some children as allergic to penicillin, but a skin test to verify the diagnosis rarely happens.

"These kids march into adulthood with a penicillin allergy label that's never really addressed," says Allison Ramsey, an allergist at Rochester Regional Health in New York.

About 10 percent of U.S. adults and children believe they have a penicillin allergy, the most commonly reported drug allergy. But 90 percent of people who think they're allergic to penicillin actually aren't, according to a 2010 report in *Annals of Allergy, Asthma & Immunology*. There is a "massive problem with the overreporting of penicillin allergy," Ramsey says.

When researchers from the University of Texas Southwestern Medical Center in Dallas recently skin tested 228 "penicillin allergic" patients, almost 98 percent of the patients turned out not to be allergic. The team reported the findings November 12 in San Francisco at the annual meeting of the American College of Allergy, Asthma & Immunology. In reality, Ramsey says, people either never had the allergy or they got over it with time.

10

percent

**Fraction of U.S. population labeled
with penicillin allergy**

90

percent

**Fraction of those who think they are
allergic, but are not**

To avoid the chance of triggering a severe allergic reaction, doctors often give people who are considered allergic to penicillin a broad-spectrum, second-line antibiotic. Compared with penicillin, these drugs are often more expensive, less effective against certain bacteria and come with more side effects. On a troubling societal level, using the more general antibiotics may encourage the spread of antibiotic resistance (*SN: 10/4/14, p. 22*). Overdiagnosis of penicillin allergy is not benign, Ramsey says.

Surveying 276 physicians, physician assistants, nurse practitioners and pharmacists at two Rochester Regional Health hospitals, Ramsey and colleagues found very low levels of allergy testing. More than 85 percent of respondents reported that they never consulted with an allergist or immunologist for antibiotic allergies or skin tests, or they did so only once a year. More than 40 percent didn't know that a penicillin allergy can resolve over time. Ramsey presented the results November 14 at the allergy meeting.

Taking the time to confirm or rule out a penicillin allergy can cut down on the use of second-line antibiotics. In the Dallas study, after penicillin allergy testing, the use of vancomycin, a powerful, last-resort antibiotic, decreased by 34 percent and use of the costly aztreonam dropped by 68 percent.

"Those are big numbers," says Ramsey. It's important that people know that childhood penicillin allergies can be revisited, she adds. "It's not a lifetime label."

J. Chen et al. Effects of proactive penicillin allergy testing on inpatient antibiotic utilization. American College of Allergy, Asthma and Immunology annual meeting, San Francisco, November 12, 2016.

D. Soni, A. Ramsey and M. Staicu. A clinical perspective: the prescriber's true understanding of a 'penicillin allergic' patient. American College of Allergy, Asthma and Immunology annual meeting, San Francisco, November 14, 2016.

Joint Task Force on Practice Parameters representing the American Academy of Allergy, Asthma and Immunology; American College of Allergy, Asthma and Immunology; Joint Council of Allergy, Asthma and Immunology. Drug allergy: an updated practice parameter. *Annals of Allergy, Asthma & Immunology*. Vol. 105, October 2010, p.259.

N. Seppa. Doctors enlisted to turn the tide on antibiotic resistance. *Science News*. Vol. 186, October 4, 2014, p.22.

N. Seppa. Drug resistance has gone global, WHO says. Science News Online, April 30, 2014.

B. Mole. Unsolved drugs. *Science News*. Vol. 185, May 3, 2014, p. 18.

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