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Pharmacist's Letter
Hospital

Sort Through Specifics of Penicillin Allergies

Approximately 80% of IgE-mediated penicillin allergies are lost over 10 years.

And mounting data suggest that cross-reactivity is based more on sharing an R1 side chain...rather than the beta-lactam ring or the cephalosporin generation.

For example, amoxicillin shares a SIMILAR R1 side chain with cephalexin. And aztreonam, ceftazidime, and cefiderocol share the SAME R1 side chain.

Assess the penicillin allergy. Review symptoms, management, timing, and antibiotics tolerated. Lean on previous med administration records in your EHR if patients aren't sure.

Some reactions are IgE-mediated (hives, anaphylaxis, etc) and occur within 6 hours. Delayed reactions, such as Stevens-Johnson syndrome (SJS), typically occur after days...and aren't IgE-mediated.

Evaluate options. For patients with severe, delayed reactions (SJS, etc), avoid all beta-lactams...and work with an allergist.

For IgE-mediated reactions, you'll see a de-emphasis on skin testing and graded challenges...and more emphasis on using meds with a dissimilar R1 side chain.

For example, use cefazolin for pre-op prophylaxis regardless of IgE-mediated allergy to penicillin or another cephalosporin...since cefazolin's side chain is unique.

Giving a second-line antibiotic to patients with a penicillin allergy is linked to an increased surgical site infection risk.

For anaphylactic penicillin reactions, consider challenging with a dissimilar cephalosporin.

But lean toward ANY cephalosporin in patients with unverified, NON-anaphylactic, or remote (such as 10 years or more) IgE-mediated penicillin reactions.

It's okay to use carbapenems with any IgE-mediated penicillin or cephalosporin allergy...if broad-spectrum coverage is indicated.

See our resource, *Managing Beta-Lactam Allergies*, for managing patients with penicillin allergies who need a penicillin (syphilis, enterococcus, etc)...or those with cephalosporin allergies.

Document, don't just de-label, the allergy. Include details in your EHR. De-labeling requires robust patient education and resources to ensure the allergy isn't added back.

Key References:

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-J Allergy Clin Immunol. 2022 Dec;150(6):1333-1393
-J Allergy Clin Immunol Pract. 2019 Nov-Dec;7(8):2722-2738.e5

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