

blood cells after exposure to gluten, 0.3 $\mu\text{g/mL}$, after preincubation with aspirin, 10 or 1 mg/mL, for 30 minutes at 37°C, was measured using an enzyme immunoassay kit (Immuno-tech, Marseilles, France). Aspirin, 10 mg/mL, enhanced the release of histamine induced by gluten, whereas histamine release was not induced by gluten after preincubation with aspirin, 1 mg/mL, or no aspirin, suggesting that the induction of histamine release by gluten might be enhanced by aspirin in a dose-dependent manner. Consequently, he was told not to ingest food containing a large amount of wheat even if he did not exercise and was not taking aspirin or other NSAIDs. Furthermore, he was cautioned to avoid wheat when he had to take aspirin or other NSAIDs.

As for the mechanisms by which aspirin enhances allergic reactions to wheat, it has been speculated that aspirin enhances histamine release by suppressing prostaglandin E_2 , which inhibits histamine release in patients with food allergy.⁵ Furthermore, it was recently reported that serum gliadin levels increased during provocation testing with wheat combined with aspirin in patients with wheat-dependent, exercise-induced anaphylaxis, indicating that aspirin might facilitate allergen absorption from the gastrointestinal tract.⁶ In this study, we confirmed that the onset and severity of allergic reactions caused by wheat depended on the dose of wheat and additional factors, such as aspirin, in the present case. Therefore, we suggest that patients with wheat allergy avoid wheat when taking aspirin or other NSAIDs for any illnesses.

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TWO-CHALLENGE APPROACH TO EVALUATION OF PENICILLIN ALLERGY IN THE ABSENCE OF SKIN TESTING REAGENTS

To the Editor:

Approximately 10% of the US population reports penicillin allergy; however, only 10% of these patients have true IgE-mediated allergy.^{1–3} Discontinuation of penicilloyl-polylysine (PrePen) skin testing reagent in the fall of 2004 has hindered the ability to evaluate penicillin allergy.² Previously, negative skin test results with PrePen and penicillin G accurately identified approximately 98% to 99% of penicillin-tolerant patients.² To our knowledge, there are currently no published alternate testing protocols.²

We describe a 14-year-old girl with recurrent streptococcal pharyngitis and suspected amoxicillin allergy. After tolerating amoxicillin previously, she developed itchiness of her skin without any visible rash on the fourth day of the most recent course of amoxicillin that resolved in 24 hours. Because this patient requires frequent antibiotic drug therapy for recurrent pharyngitis, the primary care physician requested evaluation for possible penicillin allergy before prescribing alternate broad-spectrum antibiotic agents. On examination, the only finding was that the patient's skin demonstrated mild dermatographism. Current limitations of penicillin allergy testing were discussed with the family. With their consent, we performed radioallergen sorbent testing (RAST) to the major determinant, penicilloyl, the results of which were negative. Results of skin testing to penicillin G were negative. The patient tolerated a graded challenge with amoxicillin without an adverse reaction. We performed a second graded challenge 1 month later to confirm tolerance to amoxicillin.² Shortly after ingestion of the full dose, she reported pruritus of her leg. The sole finding on examination was an area of slight erythema with raised linear excoriations on her left inner thigh that we suspected was an elicited dermatographic response. At this time, however, the family declined further evaluation. If she had passed the second oral challenge, we would have cleared her of amoxicillin allergy.

We propose a protocol for allergists to identify patients who report a history of IgE-mediated reactions to an oral penicillin product who are believed to be at low risk for a severe, life-threatening reaction on challenge (Fig 1). A RAST to penicilloyl is available commercially.⁴ Previous studies^{4–7} have reported a correlation between skin testing and RAST to penicilloyl ranging from 87% to 95%. With a negative penicilloyl RAST result, we would offer skin testing to penicillin G because minor determinant mixture is not commercially available.

The controversy of resensitization risk with elective challenge has been addressed in previous studies when PrePen was available.⁸ Because we have no established negative predictive values for the testing method, we would recommend 2 graded challenges 4 weeks apart because this may reveal procedure-induced sensitization. If the patient has any

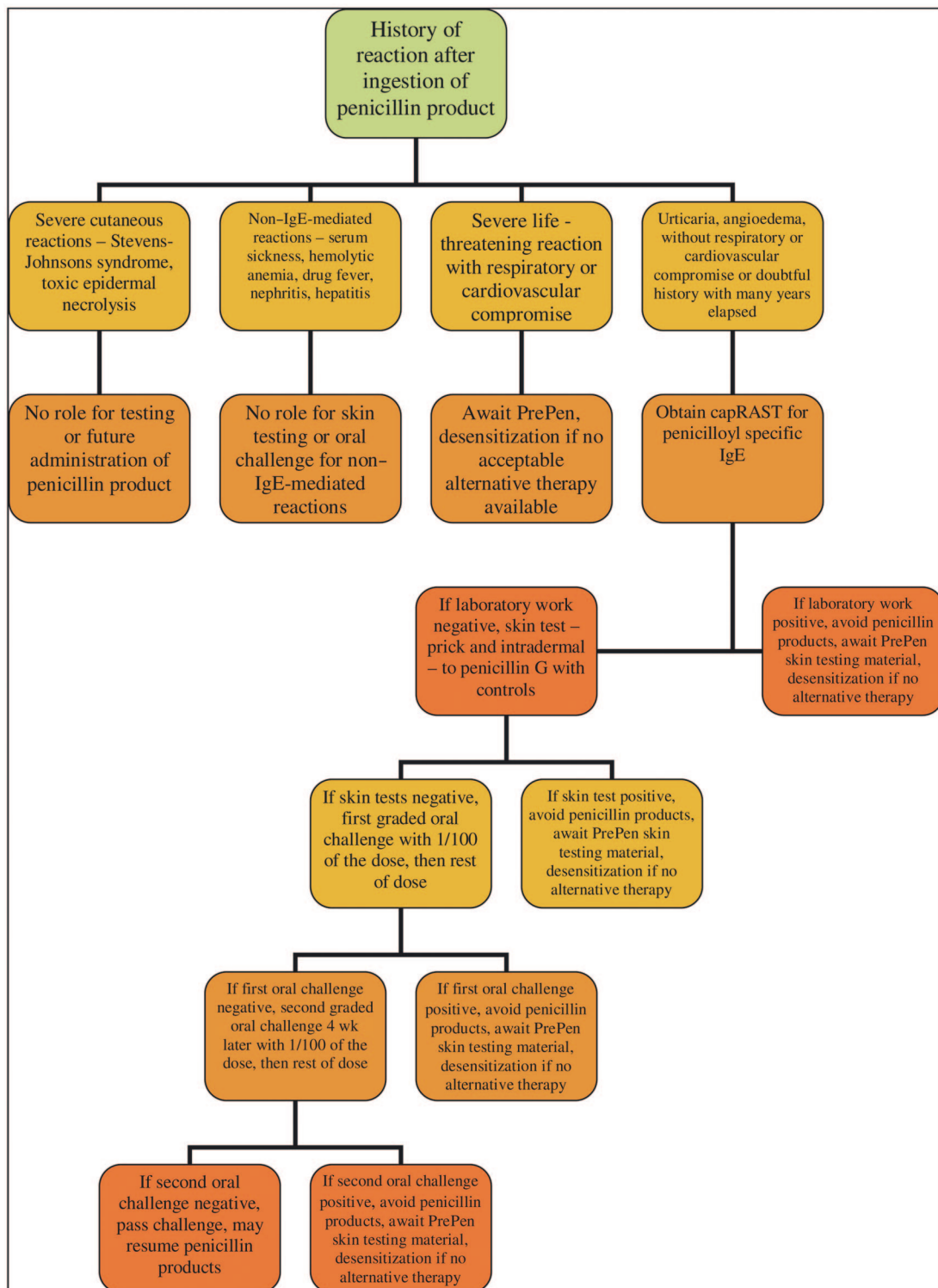


Figure 1. Suggested protocol for evaluating patients with a history of reactions to penicillin. CapRAST indicates radioallergosorbent testing.

adverse reactions during the oral challenge process, we would advise the patient to strictly avoid penicillin products. Desensitization would be necessary if no acceptable alternate is available.

We recognize the weaknesses of this protocol compared with well-studied skin testing with major and minor determinants; however, currently, there is little to offer patients and referring physicians. We welcome comments regarding this proposed protocol. Until the return of PrePen, we hope that this protocol assists in the evaluation of penicillin allergy.

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FLOW CYTOMETRIC BASOPHIL ACTIVATION TEST: DETECTION OF CD63 EXPRESSION AS A USEFUL AID TO DIAGNOSIS OF LATEX ALLERGY

To the Editor:

Latex allergy is a worldwide problem, although up to now the real prevalence in the general population has been estimated at only approximately 1%.^{1–4} The aim of this study was to determine the clinical usefulness of an in vitro

test (basophil activation test) in the diagnosis of latex allergy.

Two groups of subjects were enrolled in the study. Group A comprised 24 latex allergy subjects, 9 males and 15 females, aged 11 to 47 years. The diagnosis of latex allergy was made on the basis of the clinical history and a positive IgE test result and confirmed by a positive NRL glove use test result. The IgE test included skin prick tests (SPTs) with commercial NRL extract (Alk-Abellò, Spain) and latex radioallergosorbent testing (Pharmacia CAP system). Group B, the control group, comprised 19 healthy individuals, 9 males and 14 females, aged 27 to 43 years, without latex allergy. All subjects were referred to the Allergology and Clinical Immunology Service of the Policlinico Hospital in Bari, Italy.

All patients underwent a basophil activation test using 3 distinct dilutions of latex allergen solution used for skin testing (containing Hev b 5 and Hev b 6.02; Alk-Abellò) in phosphate-buffered saline at dilutions of 1/50, 1/100, and 1/500. In group A, 21 (88%) of 24 subjects presented with positive specific IgE levels. In group B, only 4 (21%) of 19 subjects presented with positive specific IgE levels ($P < .05$). Positive SPT results with commercial extract were elicited in 22 latex allergic patients (92%) vs only 3 positive results in nonallergic patients (16%) ($P < .05$). All 24 latex allergic patients and none of the control group had a positive latex challenge result.

The differences between basal basophil activation values and latex-specific response to the basophil activation test at all latex concentrations used were statistically significant in the group of latex allergy patients ($P < .05$). These results were significant also with respect to the control group ($P < .05$ for all antigenic stimulations).

Using a receiver operating characteristic curve, we established 5% of activated basophils as the cutoff point (area under the curve). According to these criteria, the sensitivity, specificity, and predictive values were calculated and are given in Table 1.

The latex concentration of 1/500 can be considered optimal, since it reaches 100% specificity and 95% sensitivity with a positive predictive value of 100%. The positive predictive value was 100%, which means that a patient with a positive basophil activation test was definitely allergic to latex, whereas the negative predictive value was 95%, which means that if the basophil activation test result was negative, there was a 95% probability that the subject was not allergic to latex. Taken together, the results of this study led us to consider the basophil activation test as a highly reliable procedure for the detection of IgE-mediated allergy to latex.

All the results in our study refer to our study population, in other words to subjects in whom latex allergy manifested as a skin complaint. As a consequence, we could regard these findings as referable to individuals who have severe reactions after exposure to latex allergens, in whom it is dangerous to perform in vivo tests.^{5,6}