

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}

Table 1. Sensitivity, Specificity, and Predictive Values for the Basophil Activation Test at Different Latex Concentrations

Latex concentration	Sensitivity, % (95% CI)	Specificity, % (95% CI)	PPV, % (95% CI)	NPV, % (95% CI)
Dilution 1/50	95.8 (87.8–103.8)	84.2 (67.8–100.6)	88.5 (76.2–100.8)	94.1 (82.9–105.3)
Dilution 1/100	79.2 (63–95.4)	100	100	79.2 (63–95.4)
Dilution 1/500	95.8 (87.8–103.8)	100	100	95 (85.5–104.5)
Serum specific IgE	87.5 (74.3–100.7)	78.9 (60.6–97.2)	84 (69.6–98.4)	83.3 (66.1–100.5)

Abbreviations: CI, confidence interval; NPV, negative predictive value; PPV, positive predictive value.

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