

Ten months earlier, she had tolerated intramuscular ceftazidime.

Two years later, the patient underwent skin tests with penicilloylpolylysine (Allergopen, Reinbek, Germany), minor determinant mixture (Allergopen), benzylpenicillin, ampicillin, and amoxicillin, as well as ceftazidime, cefotaxime, ceftriaxone, cefuroxime, cefamandole, cephalothin, cephalexin, cefaclor, and cefixime, as previously described (3). Cephalosporins were used at a concentration of 2 mg/ml in 0.9% NaCl. Intradermal testing with ceftazidime produced a wheal of 6×8 mm. Prick and intradermal histamine tests produced wheals with maximum diameters of 7 and 10 mm, respectively. Intradermal tests with the above cephalosporins were negative in 40 control subjects, seven of whom had previously tolerated ceftazidime.

Assays (UniCAP[®] specific IgE; Pharmacia & Upjohn, Uppsala, Sweden) for specific IgE to penicilloyl G, penicilloyl V, ampicilloyl, amoxicilloyl, cefaclor, and ceftazidime were negative (<0.35 kU/l). The ceftazidime assay was an experimental prototype.

We performed single-blind, placebo-controlled oral challenges with penicillin V (therapeutic dose: 1 000 000 IU), ampicillin (1 g), cephalexin (500 mg), cefaclor (500 mg), cefuroxime axetil (500 mg), and cefixime (400 mg) on different days. Increasing amounts (0.01, 0.1, and 1.0) of the therapeutic doses, indicated in parentheses, were administered at 1-h intervals, with negative results.

Clinical findings and the positive intradermal test with ceftazidime suggested a type-I allergic reaction.

The fact that we used an experimental prototype and that we performed our assays 2 years after the reaction may explain the RAST negativity. In the meantime, the IgE titer may have fallen below the cutoff value, as noted with penicilloyl IgE antibodies (4).

We previously diagnosed two cases of immediate hypersensitivity to ceftazidime on the basis of skin-test and RAST positivity (2). One patient – who displayed positive results only to ceftazidime – was not challenged with other β -lactams. The other had reacted to ceftazidime and ceftriaxone in separate episodes and showed skin-test and RAST positivity to both cephalosporins.

The present subject displayed skin-test, RAST, and challenge negativity with other β -lactams (including first-, second-, and third-generation cephalosporins). Thus, the patient's sensitization appeared to involve the entire ceftazidime molecule, as previously demonstrated with cefaclor (5). To our knowledge, this is the first case in which selective immediate hypersensitivity to ceftazidime has been demonstrated.

For evaluating immediate reactions to cephalosporins, it is crucial to test the responsible drug in addition to penicillin determinants.

In assessing the selectivity of the response, negative results in skin testing with cephalosporins other than the culprit one appear to be a reliable indicator of tolerability. However, the routine prescription of alternative cephalosporins on the basis of skin-test negativity should be made the subject of further studies. Meanwhile, such prescriptions should be given only in selected cases after a careful allergologic examination including the relevant challenge.

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Accepted for publication 31 August 2000
Allergy 2001; 56:84–85
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ISSN 0105-4538

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Allergenicity of rHev b 10 (manganese-superoxide dismutase)

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Key words: Hev b 10; latex allergy; MnSOD; recombinant allergen.

● MANGANESE-superoxide dismutase (MnSOD) of *Hevea brasiliensis* has been identified as an IgE-binding protein in natural rubber latex (1) and was designated as latex allergen Hev b 10 (2). Since its allergenicity has not been studied so far, we produced a recombinant maltose-binding protein (MBP), latex-MnSOD (rHev b 10) fusion protein, to investigate the IgE-binding reactivity of Hev b 10 with sera from latex-allergic patients.

cDNA (2 ng) from *H. brasiliensis* leaves (3) was amplified in the presence of 25 pmol modified Hev b 10-specific primers (5'-Hev b

MnSOD is of minor significance in latex allergy.

10: 5'-GTATACGTACAGACCTTCT-CTCTCCCCGATCTC-3'; 3'-Hev b 10: 5'-CCGAAATTCTAAGAAGAAGGGCA-TTCTTTGGC-3') based on the nucleotide sequence of EMBL accession no. AJ249148 (partial mRNA of *H. brasiliensis* MnSOD), 50 mM KCl, 10 mM Tris, pH 9.0, 2.0 mM MgCl₂, 0.01% (w/v) gelatin, 500 µM dNTP, and 2.5 units Taq polymerase at 95°C for 3 min, followed by 40 cycles (95°C, 1 min; 67°C, 1 min; 72°C, 1 min) and a final elongation at 72°C for 10 min (final volume: 50 µl; MWG Primus 25 cyler). The PCR product (635 bp) was adapted with *Sna* *BI*-*Eco* *RI* and subcloned into the *Xmn**I*-*Eco* *RI* digested pMAL-c2 (3). The resulting clone pMALcHev b 10 overexpressed a 65.6-kDa MBP-Hev b 10 fusion protein in *E. coli* host TG-1. Comparison of our *Hevea* MnSOD nucleotide sequence (EMBL accession no. AJ289158) with the sequence described above (accession no. AJ249148) revealed differences in three amino-acid positions (120: GCT [Ala]→GTT [Val], 123: CGA [Arg]→CAA [Glu], 147: GTA [Val]→GTG [Val]).

The expression and purification of the fusion protein was performed as described recently for MBP-rHev b 1 (3). To investigate the IgE-binding reactivity, the MBP-rHev b 10 fusion protein was coupled onto nitrocellulose disks and was tested by enzyme allergosorbent test (EAST) (4) with sera from 20 latex-allergic health-care workers (HCWs) and from 20 latex-sensitive children with spina bifida (SB). Hev b 10-specific IgE values of >0.35 kU/l were considered positive. Five sera from patients without latex sensitization were used as controls. The results of the EAST showed that only two sera (1.27 kU/l and 0.43 kU/l) from 20 SB patients tested showed specific IgE antibodies to recombinant latex MnSOD. The 20 HCW sera and all controls including MBP revealed negative results. The specific IgE-binding to MnSOD was confirmed by immunoblotting for one serum

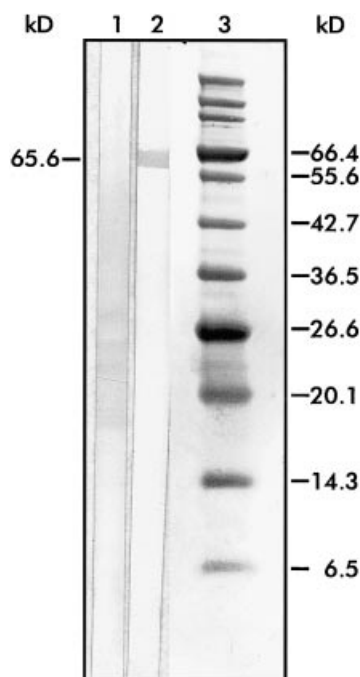


Figure 1.

sample (1:5 dilution) with MBP-MnSOD as antigen (Fig. 1; lane 2) and MBP as a control (Fig. 1, lane 1).

This patient also had specific IgE antibodies to latex (36 kU/l), Hev b 1 (3.89 kU/l), and hevein (Hev b 6.02; 3.58 kU/l). Furthermore, *Aspergillus fumigatus*-specific IgE antibodies were also detectable (5.76 kU/l). Since IgE to *A. fumigatus* may cross-react with various MnSODs (5), it cannot be excluded that the IgE-binding to MnSOD in this SB patient may have been caused by the cross-reactivity between *A. fumigatus* and MnSOD.

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Accepted for publication 11 September 2000
Allergy 2001; 56:85–86
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ISSN 0105-4538

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Latex rush desensitization

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Key words: allergy; desensitization; latex; sublingual.

● ALLERGIC reactions to natural rubber latex (NRL) have been reported with increasing frequency since the first description by Nutter in 1979 (1). The main therapy is to avoid the exposure to latex, but this is difficult because of the ubiquity of latex products.

To our knowledge, just one clinical report dealing with desensitization to latex is available in the literature. However, the

A successful use of sublingual immunotherapy.