

Short Communication

Delayed and immediate reactions to imipenem

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Case Report

A 33-year-old woman, with no history of atopy or allergy to drugs, presented with eczema starting on the left leg at the site of pre-existing ulcers, and spreading to both legs. Various topical drugs had been applied to the ulcers, including antibiotics, some of which were indicated only for parenteral administration. The eczema had appeared after 2 weeks of continuous application of a mixture of imipenem and cilastatin (Tienam®), obtained by mixing 1 g of imipenem-cilastatin in 100 ml of physiological saline. The dermatitis resolved after suspension of this antibiotic mix and topical application of corticosteroids.

2 weeks after resolution of the eczema, patch tests were performed with the European standard series, together with the topical drugs applied, with positive reactions to nickel sulfate, lanolin alcohol and Tienam® 20% pet. (Table 1). Patch tests with the 2 components

of Tienam® (imipenem and cilastatin) at 20%, 10% and 5% pet. were negative after 20 min, but strongly positive to all concentrations of imipenem at D2 and D3. Patch tests with penicillin and cephalosporins were also positive to cephtazidime pentahydrate 20% pet.

A prick test having been negative, a subsequent intradermal test with 0.1 ml imipenem 2.5 mg/ml was positive, giving an immediate erythematous-edematous reaction, with infiltration, lacrimation and edema of the face after 2 h. The latter symptoms regressed within 24 h of systemic administration of antihistamine. After 3 days, an erythematous blistering reaction appeared at the site of the intradermal test.

Assays for total IgE and RAST for penicillins G and V, amoxycillin, ampicillin and cephaclor were negative. It was judged unwise to make in vivo tests with penicillins and other antibiotics, in view of the gravity of the symptoms triggered by the previous test. It was not possible to look for specific IgE against imipenem, as no reagent to this drug is commercially available.

Table 1. Patch test results

Allergen	Concentration (all pet.)	20 min	D2	D4
Citrizan®	as is	–	–	–
Fitostimoline®	as is	–	–	–
Rifocin®	as is	–	–	–
Tienam® powder	20%	–	++	++
imipenem	20%	–	++	++
imipenem	10%	–	++	++
imipenem	5%	–	++	++
cilastatin	20%	–	–	–
cilastatin	10%	–	–	–
cilastatin	5%	–	–	–
penicillin	5%	–	–	–
cefazolin	20%	–	–	–
cefalexin	20%	–	–	–
cefepime	20%	–	–	–
ceftriaxone	20%	–	–	–
cephradine	20%	–	–	–
ceftazidime				
pentahydrate	20%	–	++	++
nickel sulfate	5%	NT	++	++
lanolin alcohol	30%	NT	++	++

Discussion

Contact allergy to oral or parenteral antibiotics, an occupational hazard of nurses (1), can also occur in patients when such antibiotics are used improperly for the topical treatment of leg ulcers (2). Imipenem belongs to the carbapenem family of wide-spectrum antibiotics, used to treat severe or resistant infections. Imipenem is combined with cilastatin, which inhibits its renal inactivation.

The contact sensitization potential of imipenem has been confirmed in the guinea-pig (3). In the same study, imipenem was shown not to cross-react with penicillin and cephalosporins. The multiple positive reactions in our patient may therefore have been concomitant.

Immediate hypersensitivity to imipenem may likely be attributed to cross-reaction between imipenem and penicillin (previously used in this patient): 50% of sub-

jects with immediate allergic reactions to penicillin also react to skin tests with imipenem (4). Immediate hypersensitivity could also have been due to IgE production triggered by contact sensitization: challenge testing for contact hypersensitivity to DNFB in BALB/c mice has been reported as causing immediate reactions (5, 6).

Reference

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