

Patient 5. A 58-year-old woman was hospitalized with a generalized itchy vesiculopapular eruption with severe mucosal affection. She was treated with systemic corticosteroids and antibiotics, and the cutaneous lesions cleared within 2–3 weeks. Some weeks before this outbreak, the patient had taken several drugs, including tetrazepam and nabumetone, for lumbar arthralgia.

Patch tests. All five patients were patch tested with the GEIDC standard series, tetrazepam, diazepam, bromazepam, and lorazepam, all at 1% pet. Other drugs, such as nabumetone and diclofenac, were also tested. Reading was carried out at 48 and 96 h. Patch tests with tetrazepam were positive (+/++) in all cases and negative with the other substances.

Skin tests. Prick and intradermal tests were performed with tetrazepam and diazepam, and read at 15 min and 48 and 96 h, with negative results.

Oral challenge tests. Single-blind oral challenge tests with increasing doses of diazepam until an accumulative dosis of 8.75 mg was reached were performed in patients 1, 2, and 3 without ill effect. Patient 4, who treated herself without medical control, reported good tolerance of diazepam and lorazepam. Oral challenge with tetrazepam was not done in any case. Oral challenges with the NSAIDs involved in patients 2, 4, and 5 were negative.

We present five cases of generalized cutaneous reactions to tetrazepam. Patients 1–4 were diagnosed with systemic contact dermatitis, and patient 5 was diagnosed with Stevens-Johnson syndrome. Positive patch tests to tetrazepam confirm the value of this tool in the diagnosis of adverse cutaneous reactions induced by this drug.

In our patients, patch tests with other benzodiazepines were negative, and four patients tolerated oral administration of diazepam, a benzodiazepine with great structural homology with tetrazepam. These data, in agreement with those of other authors (1, 3), indicate that there is no cross-reactivity among benzodiazepines. However, Kämpgen

et al. (4) found positive patch tests to diazepam in one patient with tetrazepam allergy. Garcia Bravo et al. (2) also found positive patch tests be explained by concomitant sensitization.

Since we need more data about cross-reactivity among benzodiazepines, patch tests with other benzodiazepines are useful in order to offer a therapeutic alternative, but, in our opinion, tolerance must always be confirmed by oral challenge.

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Immediate-type reactions to cisatracurium

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Key words: anaphylaxis; general anesthesia; neuromuscular blocking agent.

● CISATRACURIUM is a new nondepolarizing muscle relaxant of the benzyloquinolinium group, corresponding to a 1*R*-cis 1'*R*-cis isomer of atracurium. Atracurium is a defined mixture of 10 stereoisomers of differing pharmacology. The isomer cisatracurium usually comprises 15% of the commercially available atracurium preparations. In contrast to atracurium, cisatracurium in animal experiments and clinical reports was devoid of unspecific histamine liberation and clinically significant cardiovascular side-effects even in extremely high doses (1, 2). We report on five patients with anaphylactic reactions during anesthesia revealing positive skin test reactivity to cisatracurium.

Specific IgE (Table 1) was determined for latex, muscle-relaxant HSA, alcuronium, and suxamethonium. Prick testing was performed for latex, and intracutaneous testing was performed for succinylcholine (0.02 mg/ml), methohexital (0.01 mg/ml), thiopental (0.2 mg/ml), pancuronium (0.02 mg/ml), atracurium (0.01 mg/ml), and cisatracurium (0.002 mg/ml). A wheal formation of at least 5 mm in diameter with surrounding erythema was classified as positive. Skin testing in five healthy controls was negative (3).

Patient 1. A 25-year-old woman received cisatracurium and thiopental during induction, developing severe hypotension shortly thereafter. Three days later, general anesthesia without these agents was well tolerated.

Patient 2. Shortly after his first general anesthesia and the administration of cisatracurium, fentanyl, thiopental, and isofluran, a 60-year-old man developed

generalized urticaria, hypotension, and bronchospasm.

Patient 3. After administration of cisatracurium, fentanyl, thiopental, and succinylcholine, a 57-year-old woman developed erythematous rash, hypotension, and sinus bradycardia.

Patient 4. Shortly after cisatracurium administration, a 51-year-old woman with multiple previous general anesthetics developed bradycardia and a drop in blood pressure from 180/90 to 90/50. Three weeks later, under the same anesthetic protocol, the patient developed massive bronchospasm, respiratory insufficiency, and shock.

Patient 5. After induction with propofol and atracurium, a 54-year-old woman with known history of asthma and arterial hypertension developed generalized urticaria. Four months later, after administration of cisatracurium, thiopental, isofluran, and remifentanyl, generalized urticaria and bronchospasm appeared despite premedication.

Cisatracurium, a 1*R*-cis 1'*R*-cis isomer of atracurium, has been introduced as an agent practically devoid of unspecific histamine liberation and cardiovascular side-effects

(1, 2). A recent study reports one patient developing bradycardia and truncal flushing 2 min after administration of cisatracurium (4). Our report summarizes five patients with symptoms ranging from urticaria, bronchospasm, and bradycardia to severe hypotension, revealing in all patients positive skin testing to cisatracurium. Cross-sensitization to atracurium was found in all patients. This finding is of clinical relevance, as, in one patient (case 5), a reaction to atracurium was followed by a severe reaction to cisatracurium despite pretreatment with antihistamines. In our patients, no skin reaction was observed when other muscle relaxants were tested, a finding which is consistent with previous reports indicating different rates of cross-reactivity between neuromuscular blocking agents of different chemical background (5, 6).

Our study suggests that although cisatracurium may have only very little if any unspecific histamine-releasing activity, it retains considerable potential for the induction of anaphylactic reactions.

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True monosensitivity to a tropical sole

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Key words: fish allergy; food allergy.

● FISH is one of the most frequent causes of food allergy. All fish species investigated so far contain a 12-kDa parvalbumin analogous to Gad c 1, the major cod allergen (1–3); as a consequence, most allergic patients report clinical reactivity to several fishes, and those who are clinically sensitive only to specific fishes (4, 5) are generally positive on both skin prick test (SPT) and RAST with tolerated species. Since parvalbumin is both heat-stable and resistant to proteolytic digestion, symptoms of fish allergy are generally systemic. We report an unusual case of immediate contact allergy induced by a single fish species.

I.C., a 28-year-old man, experienced an episode of severe oral itching associated with

Table 1. Clinical characteristics and results of skin testing in patients investigated

Patient no.	Age (years)	Sex	IgE (kU/ml)	Type of anaphylactic reaction	Cisatracurium skin testing	Atracurium skin testing
1	25	F	79.2	Hypotension	1 mg/ml prick	1 mg/ml prick
2	60	M	12.8	Urticaria, bronchospasm, hypotension	10 µg/ml i.c.	10 µg/ml i.c.
3	57	F	255.3	Flush, bradycardia, hypotension	10 µg/ml i.c.	10 µg/ml i.c.
4	51	F	28.0	Bronchospasm, hypotension, bradycardia	100 µg/ml i.c.	10 µg/ml i.c.
5	54	F	509.0	Urticaria, bronchospasm	10 µg/ml i.c.	10 µg/ml i.c.