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RESEARCH LETTER

Urticaria caused by dimenhydrinate

To the Editor,

Dimenhydrinate is an H1 antihistamine of the ethanalamine group with important anticholinergic, antiserotonergic and sedative properties.¹ It is used in various disorders such as vertigo, motion sickness (car and boat sickness), nausea, vomiting.

Allergic reactions after administration of dimenhydrinate are rare, in view of the frequency of employment.²

We present the case of a 52-year-old woman who, 1 h after taking a dimenhydrinate pill, reported the appearance of urticaria on the abdomen, on lower and upper limbs, on face and neck and total body itch. These symptoms disappeared in few hours after treatment with betamethasone 4 mg i.m. and oxatomide 30 mg orally. One month later the patient had another allergic reaction taking a dimenhydrinate chewing gum, the symptoms were similar to those of the first reaction but after 1 h, yet on this occasion, there was complete remission of the reaction only taking oral antihistamines.

The patient was suffering from Behcet's disease (BD), a complex multisystem disease of unknown etiology, and Hashimoto's thyroiditis (HT) in treatment respectively with infliximab for six months and levothyroxine 100 mcg for nearly 23 years, moreover she reported hypertension and diabetes in treatment respectively with ramipril 5 mg/hydrochlorothiazide 25 mg for 4 years and metformin 500 mg for 2 years.

The patient's personal history was negative for allergic diseases other than episodes of erythema using a metal watch; moreover in the past she tolerated antihistamines from other groups (rupatidine, levocetirizine).

Therefore allergological evaluations were carried out including a skin prick test with commercial extracts (Stallergenes, Saronno, Varese, Italy) of the most common inhalants (house dust mites, moulds, *Parietaria judaica*, grass pollen, dog and cat dander) and food (milk proteins, egg yolk, egg white, cod, shrimp, *Anisakis simplex*, peanut, soybean, tomato, wheat flour, celery, carrot, potato, bean, eggplant, apple, orange). A patch test was conducted with commercial series: standard European series and preservatives (Lofarma, Milan, Italy); specific IgE antibodies (Phadia CAP System fluorimetric test, Uppsala, Sweden) for the above reported inhalants and food allergens. Skin prick tests

and specific IgE for the most common inhalant and food allergens were negative as were patch tests.

The patient was advised not to take dimenhydrinate and she did not report any allergic reaction.

The temporal correlation, few hours between intake and clinical manifestations in both cases, and the absence of urticaria without drug assumption establish a probable cause-effect relationship between drug and urticaria according to the Naranjo algorithm (Naranjo score: 5).³

There are few known cases of dimenhydrinate allergic reactions exclusively characterised by fixed drug eruption (FDE).^{1,2,4,5}

We considered it important to report this case because the patient showed only urticaria and not erythema fixed as in the other cases cited; according to the new sub-classification of delayed type IV immune reactions, FDE is a type IVc reaction in which cytotoxic T cells play the predominant role,⁶ while the complex nature of the pathogenesis of urticaria has many features in addition to the release of histamine from dermal mast cells.⁷

Therefore we can find in the clinical history of the patient a motivation for the singularity of the adverse reactions to this molecule. In fact on the one hand Lichting et al.⁸ showed that the number of mast cells is increased in reactive and spontaneous skin lesions of BD when compared with apparently normal skin of BD or those with other skin diseases. They also reported that mast cell degranulation might have a role in the pathogenesis of BD. On the other hand a cross-linking of IgE receptors of mast cells induced by anti-thyroid antibodies, in HT, may presumably be a cause of histamine release.⁹

Therefore we referred this case for its singularity, as it is the first case, to our knowledge, of urticaria after taking dimenhydrinate, while FDE is the clinical manifestation in the other cases cited. Probably its singularity is justified by the presence of BD and HT, which may create a state of mast cell instability, in our opinion, able to cause urticaria as clinical manifestation of dimenhydrinate adverse reaction.

References

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