

CASE REPORT

CASO CLINICO

Allergic reaction to methylprednisolone: a case report

Allergia a metilprednisolone: un caso clinico

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Parole chiave

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Summary

Corticosteroids can cause allergic reactions, both delayed hypersensitivity reactions after topical use, and immediate hypersensitivity reactions after systemic use. For the diagnosis of immediate allergic reactions a standardized method is not available. We report a case of a systemic allergic reaction to methylprednisolone sodium hemisuccinate in which diagnosis was made by skin prick test.

Riassunto

I corticosteroidi possono essere responsabili di reazioni allergiche, sia di tipo ritardato che di tipo immediato. A tutt'oggi non è disponibile un metodo standardizzato per la diagnosi delle reazioni allergiche di tipo immediato. Descriviamo il caso di una reazione allergica sistemica a metilprednisolone in cui la diagnosi è stata effettuata mediante prick test.

Introduction

Corticosteroids are widely used in the treatment of several diseases, including allergic diseases. Corticosteroids can cause allergic reactions, both delayed hypersensitivity reactions after topical use¹, and immediate hypersensitivity reactions after systemic use². Contact allergy to corticosteroids is recognized as a problem of considerable clinical importance and its prevalence is estimated of 0.5%-5%³. On the contrary, in comparison to their extremely frequent use, immediate systemic allergic reactions to corticosteroids remain quite uncommon⁴. In the case of delayed hypersensitivity reactions patch tests can be used for diagnosis¹, while for the diagnosis of immediate allergic reactions a standardized method is not available yet, and different methods (skin prick test and/or intradermal test) with different drug concentrations have been described⁴⁻⁹.

We report a case of a systemic reaction after intramuscular administration of methylprednisolone sodium

hemisuccinate in which diagnosis was made by skin prick test.

Case report

A 50-year-old man was treated with 20 mg intramuscular methylprednisolone sodium hemisuccinate for herniated disc; about 10 minutes later, he complained itching of scalp, palm of hands, facial angioedema, a wheal in the site of injection, hypotension. Hypotension spontaneously resolved in 20 minutes, and cutaneous symptoms in about 1 hour.

Familial history revealed a brother affected by allergic rhinoconjunctivitis; personal history was negative for allergic diseases. The patient did not report previous adverse drug reactions; he had been previously treated with systemic corticosteroids without adverse reactions. Skin prick tests (SPTs) with the more common aeroallergens yielded negative result. Total IgE antibodies were 98.6 kU/L. Specific IgE

were negative for common aeroallergens and food allergens.

To determine whether the adverse reaction was due to allergy to methylprednisolone, we performed SPTs with dilutions of 1:10000-1:10 obtained from the commercial preparation of methylprednisolone sodium hemisuccinate (20 mg/ml) diluted in saline solution and with the undiluted preparation. Histamine and saline were used as positive and negative control. The patient gave informed written consent. SPTs were negative with all dilutions, while SPT with the undiluted preparation elicited a positive reaction of 8-mm wheal diameter. To exclude an irritative response we performed the same procedure on 5 control subjects, without any response. Due to the positive result of the SPT and the history of a severe systemic reaction, we did not carry out intradermal tests.

In order to have an available alternative, an oral test with increasing doses of deflazacort was performed and resulted negative. The patient was advised to avoid corticosteroids, exclusive of deflazacort.

On the basis of clinical history and positive SPT, diagnosis of allergy to methylprednisolone was made.

Discussion

Systemic reactions such as urticaria/angioedema, bronchospasm, anaphylaxis after systemic administration of corticosteroids have been reported^{2,10}. Since corticosteroids are basic drugs for the treatment of allergic diseases, allergic reactions to corti-

costeroids are often considered unlikely so that allergy to corticosteroids may be underdiagnosed, or underrecognized when symptoms overlap with those of the disease they are used to treat. Our report confirms that clinicians should be aware that allergic reactions to corticosteroids are possible.

The most common corticosteroids causing systemic allergic reactions are methylprednisolone and hydrocortisone, but reports of hypersensitivity to almost all corticosteroids preparations are available¹⁰; the higher frequency of allergic reactions to methylprednisolone and hydrocortisone may be attributable to the widespread use of these preparations.

The pathogenesis of these reactions often remains unclear and is not homogeneous: both immunological and not immunological mechanisms have been proposed. Positive skin tests (both prick tests and intradermal tests) with corticosteroids suggesting an IgE mediated mechanism have been reported^{5,6,8,9,11-14}. In the case of negative skin tests, a mechanism of pseudo-allergic reactions similar to aspirine-sensitivity¹⁵ has been proposed^{2,16}.

In our case the features of symptoms and positive SPT indicate an IgE-mediated hypersensitivity to methylprednisolone. This case also shows that SPT may be useful to confirm allergy to corticosteroids.

Due to the relatively small number of reports of allergy to corticosteroids and the lack of a common method of study, sensitivity, specificity, positive and negative predictive values of skin tests are unknown; a systematic and careful study of subjects with clinical history of adverse reactions to corticosteroids should be made.

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