

Correspondence

Immediate-type hypersensitivity to systemic glucocorticoids: An underrated drug allergy

To the Editor:

We are highly interested in the study “Hypersensitivity to systemic corticosteroids: an infrequent but potentially life-threatening condition” by Rachid et al.¹ It confirms that cross-reaction patterns in immediate-type hypersensitivity reactions to glucocorticoids are more difficult to identify and foresee than those in patients with cellular delayed-type contact allergy, as we previously observed.² According to Coopman et al,³ 4 patterns of cross-reactivity have been identified in patients with contact allergy to corticosteroids based on chemical modification on C16, C17, or both.

It has been presumed that the Coopman et al’s classification³ could be applied to the immediate-type hypersensitivity reactions as well.^{4,5} In contrast, Wilkinson⁶ proposed that the entire carbon ring structure of corticosteroids might behave as an allergenic site, suggesting that even C6 and C9 should be considered immune-dominant parts. In our opinion² the Wilkinson model better fits immediate-type hypersensitivity reactions. Crystallographic studies have been performed to examine the interaction between cortisol and an IgG-specific murine anti-cortisol antibody.⁷ The paratope of such an antibody forms a pocket containing several aromatic amino acids that provide a hydrophobic environment around the cortisol molecule. In that way the antibody interacts with the whole steroid molecule.⁷ Plausibly, an interaction of this type might take place with a human IgE anti-cortisol antibody. Because the humoral immune recognition probably involves the whole carbon ring structure, further modifications might be made to the original hydrocortisone molecule (ie, a methyl group on C16 and a fluorine atom on C9). This might also occur with dexamethasone and betamethasone. Perhaps a specific IgE might less easily recognize the hydrocortisone-modified molecule.

Immediate allergy to systemic glucocorticoids is uncommon and undervalued. Only comprehensive studies, such as those by Rachid et al,¹ can allow us to understand much more about the paradoxical allergy toward antiallergic drugs “par excellence.”

Gianfranco Calogiuri, MD

Elisabetta Di Leo, MD

Eustachio Nettis, MD

Angelo Vacca, MD, PhD

Antonio Ferrannini, MD, PhD

From the Section of Allergology and Clinical Immunology, Department of Internal Medicine and Infectious Diseases, University of Bari Medical School, Lecce, Italy.
E-mail: gfc.alogiuri@libero.it.

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