

Anaphylaxis following treatment with a corticosteroid report of one case

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Introduction

Acute anaphylaxis caused by corticosteroids is rare. A report is presented of one case in a patient following intramuscular hydrocortisone sodium succinate injection.

Case History

A 29-year-old Egyptian woman was admitted for cataract extraction and lens repair following a penetrating injury to her right eye. As she had been taking oral prednisolone for some weeks, up to 10 days prior to surgery, preoperative steroid cover, namely 100-mg hydrocortisone sodium succinate by intramuscular injection, was given. Previously the patient had had an allergic reaction to dipyrone ('Novalgin'), an analgesic. There was no other atopic history and no past exposure to hydrocortisone sodium succinate. Within minutes of the administration of hydrocortisone the patient showed circulatory collapse, generalized erythema, facial oedema and unconsciousness. Recovery was promptly achieved with intramuscular adrenaline and intravenous chlorpheniramine.

Total immunoglobulin E (IgE) level was 170 iu/ml (normal range 50–500 iu/ml). Intradermal tests were made with hydrocortisone acetate and hydrocortisone sodium succinate (0.1 mg in 0.1 ml) and two controls, the sodium phosphate buffering agent in the succinate preparation, and the diluent supplied with the succinate preparation. A positive response of a weal greater than 1 cm in diameter at 15 min, occurred only with hydrocortisone sodium succinate. There was no response to the phosphate buffer, the diluent or hydrocortisone acetate.

Comment

There have been five patients reported with immediate anaphylactic reactions to corticosteroids since the first case described (Mendelson, Mettzer & Hamburger, 1974). All patients previously described have been asthmatic. Our patient was not asthmatic but had a past history of drug allergy.

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As the drug is a compound of low molecular weight, it is likely that hydrocortisone sodium succinate acted as a hapten in our patient. It is of interest that skin testing displayed sensitivity to the succinate but not the acetate ester of hydrocortisone as this was also the finding of Freedman *et al.* (1981) who proposed that the affinity of different steroid esters as haptens for their binding proteins might vary and thus the potential for hypersensitivity of each ester would differ.

Moreover there is other evidence of the possible haptenic activity of the succinate determinant in that succinyl choline induces anaphylaxis mediated by IgE and in one case by IgG S-TS (Moneret-Vautrin, Laxenaire & Moeller, 1981), IgG S-TS is the heat-stable short-term sensitizing anaphylactic antibody of man (Parish, 1981).

Skin testing is the conventional confirmatory test of anaphylactic sensitivity and has been shown to be useful in the diagnosis of acute anaphylaxis in anaesthesia. (Fisher, 1979) Results in corticosteroid anaphylaxis have been less reliable and were found to be misleading where subsequent direct challenge was performed (Mendelson, Mettzer & Hamburger, 1974).

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References

- FISHER, M.M. (1979) Intradermal testing in the diagnosis of acute anaphylaxis during anaesthesia—results of five years' experience. *Anaesthesia and Int. Care.*, **F**, 58.
- FREEDMAN, M.D., SCHOCKET, A.L., CHAPEL, N. & GERBER, J.G. (1981) Anaphylaxis after intravenous methylprednisolone administration. *Journal of the American Medical Association*, **245**, (6), 607.
- MENDELSON, L.M., METTZER, E.O. & HAMBURGER, R.N. (1974) Anaphylaxis-like reactions to corticosteroid therapy. *Journal of Allergy and Clinical Immunology*, **54**, 125.
- MONERET-VAUTRIN, D.A., LAXENAIRE, M.C. & MOELLER, R. (1981) Anaphylaxis due to succinylcholine. *Clinical Allergy*, **11**, 175.
- PARISH, W.E. (1981) The clinical relevance of heat-stable, short-term sensitizing anaphylactic IgG antibodies (IgG S-TS) and of related activities of IgG₄ and IgG₂. *British Journal of Dermatology*, **105**, 223.

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