Acta Dermatovener (Stockholm) 52: 31–32, 1972

RECEPTORS FOR IMMUNOGLOBULINS ON EMIGRATED EOSINOPHIL LEUKOCYTES

The Role of Eosinophils

(Short Report)

Lenke Szekeres and Eva Szabo

From the Department of Dermatology, University of Szeged, Medical School, Szeged, Hungary

Abstract. Emigrated skin-window eosinophil leukocytes of patients with immediate-type hypersensitivity were found to show specific fluorescence when they were conjugated with FITC-labelled antihuman horse globulin. It seems probable that these cells, like monocytes and macrophages, also contain receptors for immunoglobulins.

It has long been known that antigen-antibody complexes induce eosinophilia. The association between eosinophilia and antigen-antibody reaction is so close that the presence of the one should always suggest the presence of the other. But no clear-cut conclusions can yet be drawn about the role of eosinophils.

Litt (5) considered eosinophils of great importance in the primary reaction of immune response in the regional lymph nodes. Sabesin (7), Cohen (1, 2) and Kostage et al. (4) have shown that the role of eosinophils is of the same importance in the secondary reaction. The phagocytizing capacity of eosinophils in some species is proven but in others only supposed.

In our experiments, Rebuck's (6) skin-window test was performed. The emigration of eosinophil leukocytes could be observed in a great percentage (8–12%) when soluble, non-protein containing antigen (penicillin, chloramphenicol, etc.) was applied locally in sensitive persons with immediate-type hypersensitivity. (These results are contrary to the observation of Dikeakou et al. (3) who could not find eosinophilia in similar cases.) The control, non-sensitive persons failed to show increased eosinophilia in the same experimental condition.

When the emigrated cells of sensitive patients were conjugated with FITC-labelled antihuman horse globulin (titre 1 : 8), expressed specific fluorescence was observed in emigrated eosinophil cells (Fig. 1) but circulating eosinophils of the same patient gave a negative result. Emigrated mononuclear macrophages also showed specific fluorescence of less intensity. Polymorphonuclear leukocytes showed no traces of specific fluorescence and negative results were obtained when applying goat-antirabbit serum (titre 1 : 8, 1 : 32) both in eosinophils and in macrophages.

Evidence has been presented by many authors that human monocytes as well as macrophages

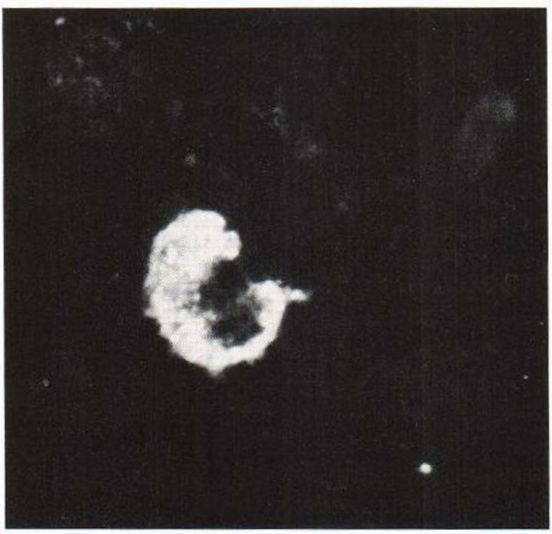

Fig. 1

contain receptor sites for IgG, IgM and for the first four components of complement.

On the basis of our results it seems probable that emigrated human eosinophils also contain receptors for immunoglobulins. This property enables them, among others, to take part in immune response.

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Received June 29, 1971

L. Szekeres, M.D.
Department of Dermatology
University of Szeged
Szeged
Hungary