

Serum IgE levels in Chagas' disease

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Summary

Elevated levels of serum immunoglobulin E are found in many parasitic diseases caused by helminths. We have previously demonstrated that giardiasis was not associated with hyperimmunoglobulinaemia E. In order to determine the influence of *Trypanosoma cruzi* on IgE levels of clinically symptomatic patients, a controlled study was performed. There was no difference between the serum IgE values from Brazilian patients with Chagas' disease and those from matched healthy Brazilian controls. We suggest that protozoan parasitic infections do not increase serum IgE levels.

Introduction

IgE levels are raised in individuals infected with helminths (Jarrett & Kerr, 1973; Ishizaka & Dayton, 1972; Spitz, 1972; Rosenberg, 1971). We have previously shown that the protozoan *Giardia lamblia* does not elevate serum IgE (Geller *et al.*, 1978). To verify the hypothesis that protozoan infections do not elevate IgE levels we studied patients with Chagas' disease. To our knowledge the influence of *Trypanosoma cruzi* on circulating IgE levels has not been previously investigated in a controlled manner.

Materials and methods

Subject selection

Sera from fourteen patients with untreated clinically symptomatic Chagas' disease and fourteen normal controls were obtained. All subjects in the test group had

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positive Machado–Guerreiro serum complement fixation tests (the classic laboratory diagnostic reaction in Chagas' disease). They had no other associated parasitic infections, nor a personal or family history of asthma, atopic dermatitis, rhinitis or allergies. No other diseases or malnutrition were present. Each patient was carefully matched individually with a normal control for age (± 5 years), sex, race and socio-economic status. Normal controls obtained from a population of blood donors were defined as healthy individuals with no personal or family history of atopy. They all had negative Machado–Guerreiro serum complement fixation tests and no evidence of other parasitic infections. There were thirteen males and one female, with seven caucasian, four black and three mulatto subjects in each group. The average age was 33 years in both groups. The age range in the Chagas' disease patients was 20 to 49 years and in the control group was 21 to 48 years.

IgE determination

The serum IgE levels were measured by the Phadebas kit method (Pharmacia Diagnostic AB, Uppsala, Sweden).

Results

The serum IgE levels in the test group were not different from those of the control group (statistical analysis using the Mann–Whitney *U* test obtained a *Z* value of 0.07, which has a two-sided *P* value of 94%). Compared to the normal serum IgE range used in our laboratory (33–915 iu/ml), there were two individuals in both groups with high serum immunoglobulin E levels (Fig. 1).

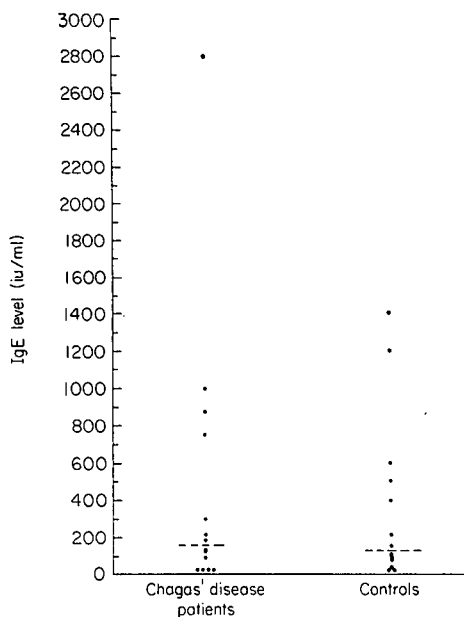


Fig. 1. Distribution of serum IgE levels in patients with Chagas' disease and in normal controls. The dashed lines show the median for each group.

Discussion

Our data showed no difference between the serum IgE levels of patients with Chagas' disease and the levels of normal controls. After giardiasis, Chagas' disease is the second protozoan infection in which a controlled study failed to show an association with hyperimmunoglobulinaemia E. It is our belief that protozoa, contrary to metazoa, do not increase the serum IgE levels. Similar studies are needed in other protozoan infections (malaria, amoebiasis, toxoplasmosis, trichomoniasis and *Pneumocystis carinii* pneumonia) to test the hypothesis that protozoan in contrast to metazoan infections do not stimulate hyperimmunoglobulinaemia E.

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