T cell responsiveness correlates differentially with antibody isotype levels in clinical and asymptomatic filariasis.


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Abstract

To establish the relationships among T and B cell responses, active infection, and clinical manifestations in lymphatic filariasis, filarial-specific lymphocyte proliferation, IgG antibody isotypes, and IgE levels were determined in an exposed population: 31 asymptomatic microfilaremics, 43 microfilaremics, 12 symptomatic microfilaremics, and 52 elephantiasis patients. Lymphocyte proliferation was higher in elephantiasis patients and asymptomatic microfilaremics than in microfilaremics (P < .004). A proportion of asymptomatic microfilaremics (32%), elephantiasis patients (37%), and symptomatic microfilaremics (58%) showed antigen-specific lymphocyte unresponsiveness, and lymphocyte proliferation to filarial antigens correlated negatively with specific IgG4 levels (\( \rho = -0.315, P < .001 \)). As elevated specific IgG4 is an indicator of active infection, it is argued that active infection may result in lymphocyte hyporesponsiveness irrespective of clinical category. Of those with elevated specific IgE levels and high T cell proliferative responses, 70% had elephantiasis, suggesting these factors have a role in pathology. However, the existence of a proportion of elephantiasis patients with low anti-filarial IgE and T cell unresponsiveness to filarial antigens suggests that elephantiasis can be caused by distinct processes.

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