Elevated cellular immune responses and interferon-gamma release after long-term diethylcarbamazine treatment of patients with human lymphatic filariasis.

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Abstract

Cellular immune responses to filarial antigens were examined in persons before and 1 year after beginning treatment with diethylcarbamazine (DEC). The subjects (17 microfilaremics, 13 asymptomatic microfilaremics, and 13 with elephantiasis) had not responded to Brugia malayi adult worm antigen (BmA) before chemotherapy. T cell proliferative responses to BmA improved significantly after therapy in the 3 clinical groups (P < .05) but was highest in the elephantiasis patients and asymptomatic microfilaremics. Cytokine release profiles after stimulation with parasite antigen were analyzed. Production of interferon (IFN)-gamma by BmA-stimulated mononuclear cells increased significantly after DEC treatment (geometric mean, 39.6-55.7 U/mL; P < .05), largely due to improved responses in elephantiasis patients and asymptomatic microfilaremics. In contrast, BmA-induced interleukin (IL)-4 release did not change significantly in these same patients after treatment. Thus, both microfilaremic and microfilaremic infections with B. malayi are associated with similar down-regulation of proliferative T cell function and IFN-gamma release.

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