Elevated levels of T cell activation antigen CD27 and increased interleukin-4 production in human lymphatic filariasis.


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Abstract

To assess the immunological changes occurring during filarial infection with or without elephantiasis, 145 patients in different clinical groups from an endemic area in Indonesia were compared with respect to plasma levels of both soluble CD25 (sCD25) and sCD27; interleukin-4 (IL-4) and interferon-gamma release by peripheral blood mononuclear cells was also measured in a smaller subset of individuals. Levels of sCD27 were significantly elevated in elephantiasis and microfilaremic patients compared with endemic normals (p < 0.002), whereas sCD25 levels remained low in microfilaremics and was only slightly elevated in elephantiasis patients compared with endemic normals (p < 0.02). As activated T cell populations release both sCD27 and sCD25, these findings imply that there is filarial-driven activation of a T cell subset that releases sCD27 rather than sCD25. The expansion of a particular T cell population by filarial parasites is further suggested by the enhancement in both IL-4-producing and CD4+CD27-T cells in PBMC from elephantiasis and microfilaremic patients compared with endemic normals. More detailed characterization and comparison of CD27-lymphocytes from these individuals may identify mechanisms involved in the pathogenesis of lymphatic filariasis.

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