Introduction. The Montenegro skin test reaction and leishmaniasis lesions share fundamental characteristics of a delayed type hypersensitivity reaction. Objectives. To determine whether the Montenegro skin test reaction (response to leishmanin) might approximate and thereby provide insight into the early inflammatory and immune response to Leishmania infection. Materials and methods. We compared the inflammatory response in biopsies of acute (evolution time 1 month), and chronic lesions (evolution time 6 months) with the Montenegro skin test reaction in the corresponding patients, and with the Montenegro skin test of asymptotically infected volunteers. Results. The proportion of CD4+ and CD8+ T lymphocytes, mononuclear phagocytes and granulocytes were similar in acute lesions and in their corresponding Montenegro skin test reactions. In contrast, CD4+ lymphocytes (32.6%) represented a significantly lower, and B cells (20%) and macrophages (27%) a significantly higher proportion of the cellular infiltrate in chronic lesions as compared to reactions in the corresponding skin test site (CD4+: 43.7%, B cells: 0.9%; macrophages: 17.5%). CD8+ T lymphocytes and macrophages were positively associated (P=0.038) in the Montenegro skin test of asymptotically infected individuals whereas CD8+ and CD4+ T cells were positively associated in the Montenegro skin test of chronic patients (P=0.002). Notably, B cells were markedly more frequent in chronic lesions (20%) than in acute lesions (5.3%) (P=0.002). Conclusion. The Montenegro skin test distinguished the cellular immune response to Leishmania in asymptomatic infection and chronic disease and may provide a surrogate of the early response to infection.

Keywords
Cutaneous leishmaniasis, delayed hypersensitivities, immune response, histopathology, immunoenzyme techniques, B-lymphocytes.