Studies on schistosomiasis in western Kenya: I. Evidence for immune-facilitated excretion of schistosome eggs from patients with Schistosomamansoni and humanimmunodeficiencyvirus coinfections.

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Persons employed as vehicle washers in the town of Kisumu, Kenya are exposed for several hours each day to water in Lake Victoria that contains Schistosoma mansoni-infected Biomphalaria pherifferi snails. This results in a focus of high endemicity for schistosomiasis and these persons have very high concentrations of eggs in their feces (mean +/- SD = 1,469 +/- 1,581 eggs per gram [EPG] of feces). Fecal egg counts, but not circulating cathodic antigen (CCA) levels, in these schistosomiasis patients differed strikingly based on the patient's seropositivity for human immunodeficiency virus (HIV). Patients who were infected with S. mansoni and were seropositive for HIV had similar levels of CCA but excreted fewer eggs (643 +/- 622 EPG; n = 16) than individuals who were not seropositive for HIV infection (1,891 +/- 1,779 EPG; n = 37) (P = 0.009). Egg excretion ratios (EPG/CCA) of the seronegative group were also significantly higher than those of the seropositive group. Those in the seropositive group showed a significant correlative relationship between egg excretion ratios and CD4+ lymphocyte percentages. These observations are compatible with the hypothesis that schistosome eggs exit the human host through the requisite facilitation of functional immune responses, and that the efficacy of this process decreases in schistosomiasis patients co-infected with HIV as their peripheral blood CD4- cell levels decrease