

Abstract:

Abstract BACKGROUND: Previous studies have reported age-dependent development of resistance to reinfection by schistosomes and identified immunological correlates of this resistance. However, whether resistance exists that is independent of age effects has been questioned. We did a longitudinal investigation of reinfection by *Schistosoma mansoni* in an adult population with high occupational exposure. **METHODS:** We monitored a cohort of 96 male car washers working along the shores of Lake Victoria, Kenya during 349.7 person-years for frequency of water contact and infection with *S mansoni*. Patients were treated with praziquantel upon study entry and after reinfection with *S mansoni*. Bivariate analyses and a multivariate proportional hazards model were used to assess the effects of water contact, previous infections, and HIV-1 on *S mansoni* reinfection rates. **FINDINGS:** 13 car washers did not get reinfected or only became reinfected after an extended time (91 weeks). 47 initially had a short time to reinfection (15 weeks) but on subsequent treatments showed increased time to reinfection (29-38 weeks). 36 consistently displayed short times to reinfection (<15 weeks) despite multiple reinfection and treatment cycles. Decreased CD4 T-cell counts in HIV-1-positive individuals corresponded to increased susceptibility to *S mansoni* reinfection. **INTERPRETATION:** Adults similarly exposed to schistosomiasis are either resistant to reinfection; susceptible, but develop resistance to reinfection after multiple treatments; or remain susceptible to reinfection. Thus, immunological resistance to reinfection with *S mansoni* exists or can develop independent of age effects. The consequence of HIV-1 co-infection suggests that CD4 T cells contribute to this resistance.