

Abstract

The effect of host infection, chronic clinical disease, and transmission intensity on the patterns of specific antibody responses in Bancroftian filariasis was assessed by analyzing specific IgG1, IgG2, IgG3, IgG4, and IgE profiles among adults from two communities with high and low *Wuchereria bancrofti* endemicity. In the high endemicity community, intensities of the measured antibodies were significantly associated with infection status. IgG1, IgG2, and IgE were negatively associated with microfilaria (MF) status, IgG3 was negatively associated with circulating filarial antigen (CFA) status, and IgG4 was positively associated with CFA status. None of the associations were significantly influenced by chronic lymphatic disease status. In contrast, IgG1, IgG2, and IgG4 responses were less vigorous in the low endemicity community and, except for IgG4, did not show any significant associations with MF or CFA status. The IgG3 responses were considerably more vigorous in the low endemicity community than in the high endemicity one. Only IgG4 responses exhibited a rather similar pattern in the two communities, being significantly positively associated with CFA status in both communities. The IgG4:IgE ratios were higher in infection-positive individuals than in infection-negative ones, and higher in the high endemicity community than in the low endemicity one. Overall, these results indicate that specific antibody responses in Bancroftian filariasis are more related to infection status than to chronic lymphatic disease status. They also suggest that community transmission intensity play a dominant but subtle role in shaping the observed response patterns.