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Quantitation of antibodies to infective larvae in *Wuchereria bancrofti* filariasis

Short communication

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A host of immunoassays have been devised in filariasis with the objective that the immunological laboratory parameters could be correlated with the disease status and eventually will provide sensitive and specific assay system for identifying infection. Antibody assays against microfilarial (mf) stages of *W. bancrofti*, namely somatic or excretory-secretory (ES) antigens and against related parasite antigens have been performed by a range of methods (Taylor and Denham, 1986). However, there are few studies directed at L_3 stages of *W. bancrofti*. In the present communication, an attempt has been made to evaluate L_3 specific antibody levels by ELISA in an infected population.

Materials and Methods

L_3 were dissected from adult female *Culex quinquefasciatus* caught in Puri district (*W. bancrofti* endemic region) of Orissa. A soluble extract of somatic antigens was prepared by homogenizing, sonicating and finally centrifuging the larval extract. The solution was then adsorbed with insolubilized rabbit antiserum against *C. quinquefasciatus* in order to remove any contaminating *Culex* materials since these are known to be immunogenic in man (Das and Dash, 1986). Human filarial sera (Das et al., 1987) were analyzed (at 300 fold dilution) by ELISA for antibody responses (IgG + M + A) against L_3 antigens. Serum from healthy individuals living in hilly regions, not endemic for filariasis, of Orissa served as non-endemic control.

Results and Discussion

Anti-L_3 antibody level in filarial sera was shown in Table 1. Taking mean A492 ± 3 SD of non-endemic normals as the reference point, the increased antibody level in each category of filariasis may be evaluated. Thus about 14% of endemic normals, 50% of asymptomatic carriers, 65% of chronic filarial and

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Table 1. L_3-specific antibody level in filarial sera as measured by ELISA

Group	Mean A492 ± SD (range)	No. positive/ No. tested	Positive
Non-endemic normals	0.10 ± 0.06 (0.02 – 0.25)	0/22	0%
Endemic normals	0.21 ± 0.13 (0.04 – 0.60)	4/29	13.8%
Asymptomatic carriers	0.32 ± 0.16 (0.08 – 0.64)	12/25	48.0%
Chronic	0.38 ± 0.19 (0.10 – 0.80)	19/30	63.3%
TPE	0.56 ± 0.27 (0.20 – 1.40)	43/48	89.6%

90% of TPE patients could be designated as positive by L_3 antibody assay. Although anti-L_3 response was found to be minimal in endemic normals, some sera in this group nevertheless have high level of L_3 antibodies.

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