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【Background】

In Sri Lanka, an enzyme-linked immunosorbent assay (ELISA), which was developed as a diagnostic method for lymphatic filariasis, showed high sensitivity and specificity in detecting filaria-specific IgG4 in urine samples. It also produced much higher positive rates than antigen tests in prevalence studies with young children. In this study, we have confirmed the usefulness of the urine ELISA in a field of Bangladesh.

【Methods】

In Thakurgaon district in the northern region of Bangladesh where lymphatic filariasis is endemic, 749 people were examined for the circulating filaria antigen with immuno-chromatographic card test (ICT). After obtaining the results, urine samples were collected from 105 ICT positive people. On the same day at night (10:00 pm–12:00 midnight) blood samples were collected from them for mf smears.

As lymphatic filariasis non-endemic area, Feni district in the southern part of the country was selected. A total of 104 people were selected as non-endemic healthy controls and examined with ICT and their urine samples were collected to be used as negative standard.

The efficacy of detecting infection/exposure to *Wuchereria. bancrofti* was compared between urine ELISA and ICT with 319 schoolchildren in Panchagarh, the northernmost district of Bangladesh.

All the urine samples were examined by ELISA to detect anti-filfaria IgG4.

【Results】

The ELISA detected 89 of 105 (85%) ICT antigen test positive subjects in endemic areas. With both ICT and microfilaria positives, the sensitivity was 97% (30/31). All of 104 ICT negative people in a non-endemic area were ELISA negative (100% specificity). In the prevalence study with 319 young children (5-10 years) from a low endemic area, seven (2.2%) were detected by the present urine test, but only one (0.3%) by ICT (P = 0.075).

【Conclusion】

The satisfactorily high sensitivity, 100% specificity and effective case detection among young ages along with scope for analyzing the titers will indicate urine ELISA to be an effective tool to confirm elimination or to detect resurgence in Bangladesh where anti-filariasis control program by mass-drug administration (MDA) has almost been completed.