A rapid test using a single drop of blood to screen for schistosomiasis in non-endemic countries

The systematic review and meta-analysis by Michel T Vaillant and colleagues[1] represents a major advance in understanding the performance of the main diagnostic tests for schistosomiasis in endemic regions. However, schistosomiasis has posed a major public health problem in non-endemic countries as well, owing to migration, particularly from sub-Saharan Africa. The estimated prevalence of this disease is higher than 50% in some national groups,[2] making the need for screening a public health priority, as also indicated by European and Italian guidelines.[3,4]

Unfortunately, the test with the optimal balance of sensitivity and specificity for *Schistosoma mansoni* according to the meta-analysis by Vaillant and colleagues,[1] circulating cathodic antigen in urine, showed poor performance in non-endemic areas.[5] In these areas, the aim is to primarily offer serological screening to people from endemic countries and treat positive cases by prioritising sensitivity over specificity, considering the risk of untreated infection and the fact that treatment of chronic schistosomiasis with praziquantel is highly effective and well tolerated.[3,4]

We have recently completed a prospective diagnostic study on a rapid immunochromatographic test (ICT) that allows the detection of specific antibodies directly on drops of blood obtained through a fingerprick. This test, currently in the clinical validation phase, is a modified version of the SCHISTOSOMA ICT IgG-IgM kit (LDBIO Diagnostics, Lyon, France), which is used with serum samples only. Once shown to be accurate, the new test would have an obvious advantage over its predecessor and over all currently available serological tests, as this test would eliminate the need for a laboratory and allow for decentralised screening.

Preliminary data are encouraging. In an analysis of 198 individuals from endemic areas who were tested consecutively, the new test showed a sensitivity of 100% and specificity of 63% (95% CI 56–70) according to the primary reference standard (presence of eggs in faeces or urine). When a composite reference standard (defined by at least two positive tests of three among ELISA, SCHISTOSOMA ICT IgG-IgM, and western blotting) was considered, the sensitivity of the new test was 86% (95% CI 81–91) and the specificity was 88% (95% CI 83–92).

Data analysis with Bayesian latent class analysis is ongoing, and the results will be published as soon as possible. Nevertheless, the preliminary data indicate that a test might soon be available, which could be performed after a simple fingerprick, could provide results within 20 min, and could contribute to effective schistosomiasis screening and treatment of populations at risk in non-endemic areas.

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