

Publication

A new rapid diagnostic test for detection of anti-Schistosoma mansoni and anti-Schistosoma haematobium antibodies

JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)**ID** 1765003**Author(s)** Coulibaly, Jean T.; N'Goran, Eliezer K.; Utzinger, Juerg; Doenhoff, Michael J.; Dawson, Emily M.**Author(s) at UniBasel** [Utzinger, Jürg](#) ;**Year** 2013**Title** A new rapid diagnostic test for detection of anti-Schistosoma mansoni and anti-Schistosoma haematobium antibodies**Journal** Parasites and Vectors**Volume** 6**Number** 29

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Parasitological methods are widely used for the diagnosis of schistosomiasis. However, they are insensitive, particularly in areas of low endemicity, and labour-intensive. Immunoassays based on detection of anti-schistosome antibodies have the merit of high sensitivity and recently a rapid diagnostic test (RDT), incorporating Schistosoma mansoni cercarial transformation fluid (SmCTF) for detection of anti-schistosome antibodies in blood has been developed. Here, we assessed the diagnostic performance of the SmCTF-RDT for S. mansoni and S. haematobium infections by comparing it with microscopy for egg detection.; A cross-sectional survey was carried out in Azaguié, south Côte d'Ivoire. 118 pre-school-aged children submitted two stool and two urine samples, which were subjected to the Kato-Katz and urine filtration methods for the detection of S. mansoni and S. haematobium eggs, respectively. Urine was also subjected to a commercially available cassette test for S. mansoni, which detects circulating cathodic antigen. A finger-prick blood sample was used for the SmCTF-RDT for detection of anti-S. mansoni and anti-S. haematobium antibodies.; The prevalence of both anti-S. mansoni and anti-S. haematobium antibodies was more than three times higher than the prevalence of infection estimated by egg detection under a microscope. Using quadruplicate Kato-Katz as the reference standard for the diagnosis of S. mansoni infection, the sensitivity, negative predictive value (NPV), and positive predictive value (PPV) of the SmCTF-RDT was 75.0%, 84.2% and 22.5%, respectively. When two urine filtrations were considered as the reference standard for the diagnosis of S. haematobium infection, the sensitivity, NPV and PPV of SmCTF-RDT was 66.7%, 94.9% and 5.1%, respectively. The specificity of SmCTF-RDT, when using egg-detection as the reference standard, was estimated to be 34.4%. This low specificity may be a reflection of the relative insensitivity of the direct diagnostic approaches using microscopy.; The SmCTF-RDT is at least as sensitive as duplicate Kato-Katz and a single urine filtration for detection of S. mansoni and S. haematobium, respectively. Further investigations into the specificity of the test for anti-schistosome antibodies are necessary, but our results suggest that it may be a useful tool for mapping the prevalence of anti-schistosome antibodies in a given population pending intervention.

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