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Immuno-Magnetic Beads ELISA for Diagnosis of *Schistosoma mansoni* Infection

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The diagnosis of *Schistosoma mansoni* infection is a challenge in areas of low transmission. Serological diagnosis is more sensitive and extensively used for detection of anti- *Schistosoma* antibodies. The study intended to evaluate the performance of the immunomagnetic beads-enzyme-linked immunosorbent assay (IMB-ELISA) as a diagnostic tool of *S. mansoni* infection in comparison with the commercial indirect hemagglutination assay (IHA), the indirect ELISA and the parasitological stool examination.

Methods: 100 subjects included in this study divided into four groups (25 each). The first was a group of cases actively passing *S. mansoni* eggs, the second was chronic cases of *S. mansoni*, and the third was a group of other parasitic infections and the fourth was a group of normal healthy subjects. Stool examination was performed and sera were collected to be examined by the three serological tests.

Results: the total detection rates of the various tests were 25 %, 46%, 48%, and 50% by parasitological, IHA, Indirect ELISA and IMB-ELISA tests, respectively. For the egg passers group, the four tests detected 100%, 88%, 96 %, and 100% of cases, respectively. For *S. mansoni* chronic cases, the four tests detected 0%, 84%, 88% and 96%, respectively. The sensitivity rates of various tests were estimated in relation to the total number of true positive *S. mansoni* cases (G1 and G2). They were 50%, 86%, 92% and 98% for the four tests, respectively.

Cross-reactivity rates were estimated in relation to *S. mansoni* negative sera (G3 and G4). The specificity rates were 100%, 94%, 96% and 98%, respectively.

Conclusion: IMB-ELISA is a sensitive and a specific method for diagnosis of *S. mansoni* in persons with low-intensity and chronic infections. Further large-scale studies are required to assess its diagnostic performance at the field level.