

Laboratory confirmation of Leptospirosis: Comparison between microscopic agglutination test IgM ELISA and IgM rapid test-Leptocheck WB

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Leptospirosis is most often diagnosed on clinical grounds, and confirmed by laboratory testing by the microscopic agglutination test (MAT). There are also rapid immunodiagnostic tests which detect IgM antibodies against *Leptospira*. Objective of this study was to compare the laboratory diagnoses by MAT measurement of IgM by ELISA and IgM based rapid immunochromatographic test [Leptocheck-WB test (LCT)] and to evaluate its clinical applicability. Clinically suspected leptospirosis patients (n=150) were recruited from National Hospital Sri Lanka, Colombo and Colombo North Teaching Hospital, Ragama) during the period June to September 2012. All patients were screened with MAT IgM ELISA (Virion-Serion) and LCT. A MAT titer of ≥ 400 , a 4-fold rise in MAT titer or seroconversion to >200 and isolation of *Leptospira* organisms from blood stream were considered criteria for laboratory confirmed cases of leptospirosis as per WHO guidelines and compared with IgM Leptocheck test positivity. Positivity of IgM ELISA, LCT, MAT (acute serum) and MAT (paired sera) was 34.7%, 44.7%, 28% and 39.6% respectively. The sensitivity and specificity of IgM ELISA and LCT with reference to MAT confirmation were 76.4%, 89.5%, 85.5% and 78.9% respectively. There was a good agreement between IgM Vs MAT and LCT Vs MAT ($\kappa=0.666$ and 0.616). The observed high sensitivity, specificity, ease of use in obtaining results rapidly and no specific skills required for performance, make LCT and IgM ELISA suitable test for early diagnosis of leptospirosis.

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