

## **A pilot study on comparison of rapid immunodiagnosics for leptospirosis infections**

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### **Introduction**

In Sri Lanka, leptospirosis is mostly diagnosed on clinical grounds. Serological confirmation is not obtainable during the acute stage of the illness. There is a need for rapid immunodiagnosics for confirmation of leptospirosis. Two immunodiagnostic assays, ie enzyme linked immunosorbent assay (ELISA) and immunochromatographic technique-Leptocheck-WB test (LCT) are used to detect leptospira specific IgM antibodies which are prevalent in the early stages of acute infections.

### **Objectives**

To compare the efficacy of these two rapid immunodiagnostic assays with the microscopic agglutination assay (MAT) to determine their applicability.

### **Methods**

A set of sera (n=83) collected in 2010 for which MAT titres were available was used to perform IgM ELISA and LCT. MAT  $\geq 400$  was used as the reference standard.

### **Results**

Positivity for LCT and IgM ELISA were 55.4% and 48.2% respectively, and both assays detected acute infection by day 3 of the illness. For LCT, the overall sensitivity, specificity, accuracy, PPV and NPV (86.5%, 75.0%, 79.6%, 69.6% and 89.4% respectively) were higher compared to the respective values for IgM ELISA (50.0%, 62.3%, 57.1%, 50.0%, 62.3%). The highest of these values were observed during the first week for LCT and during the second week for IgM ELISA. The highest agreement was observed between LCT and MAT  $\geq 400$  ( $\kappa=0.568$ ) and there was a good agreement between LCT and IgM ELISA ( $\kappa=0.520$ ).

### **Conclusions**

The high sensitivity and specificity, ease of use and the non-requirement of specialized skills and equipment, makes LCT a good choice for screening compared to MAT and its application needs to be further investigated.

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