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Comparision of IgM Capture Enzyme-Linked Immunosorbent Assay (ELISA) using Inhouse method and commercially available MRL kit for serological confirmation of dengue infection

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Laboratory diagnosis of dengue infection is important for the management of the patients. In this study IgM capture ELISA using an Inhouse method and commercially available kit (MRL diagnostics, U.S.A.) was compared to detect diagnostic capability of Inhouse IgM ELISA for provision of diagnostic facilities to the public at an affordable cost.

Eighty acute and convalescent serum samples were collected from serologically confirmed dengue patients. Serological confirmation of patients were performed by Heamagglutination Inhibition (HI) assay, gold standard assay for dengue on paired serum samples. All collected acute and convelescent sera were tested by IgM ELISA using the Inhouse method and MRL kit. Antigen and conjugate for the Inhouse IgM method were prepared in the laboratory. A cocktail of four dengue antigens containing 25 Antigen ELISA units of each type was prepared and used as the assay antigen. Conjugate was prepared using a serum sample with high dengue Anti flavi IgG antibody titre conjugated with Horseradish peroxidase. A prospective study of both IgM ELISA assays were performed using 113 acute sera collected from dengue suspected cases.

Overall results showed that 46% and 52% acute sera collected from dengue confirmed patients were positive by Inhouse ELISA assay and MRL kits respectively. In the prospective study done using acute sera collected from dengue suspected patients showed that 44% and 52% were positive by Inhouse ELISA assay and MRL kits. There was no significant difference in positivity between these two assays (P=0.18).

Inhouse IgM ELISA can be used for provision of laboratory diagnosis of dengue virus infection more than 5 days. The assay is 10 times less costly than in using MRL kits as assay antigen and conjugate can be prepared easily in the laboratory.

Financial assistance by the International Atomic Energy Agency (Technical Co-operation grant no SLR/ 06 / 024) and University of Kelaniya (Research grant no RP/ 03/04/06/01 /00) is gratefully acknowledged

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