COMPARISON OF CLINICAL AND LABORATORY PARAMETERS IN THE EARLY DIAGNOSIS OF DENGUE FEVER

A PROJECT REPORT PRESENTED BY

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ABSTRACT

Dengue fever (DF) is an arthropod born viral disease transmitted by *Aedes* mosquitoes. It has become a major health problem worldwide due to rapid global expansion and appearance of more virulent DENV genotypes. Early diagnosis is rather important to take necessary precautions since the serious outcome of the disease cannot be predicted. Several clinical parameters aided by several laboratory methods are being used for the early diagnosis. These include virus isolation, detection of viral ribonucleic acid (RNA), detection of viral antigens and serology.

This study compares the clinical and laboratory parameters in early diagnosis of DF by recruiting 44 clinically diagnosed dengue patients according to WHO criteria and testing them for DENV specific RNA and IgM in acute and convalescent sera. RT-PCR was performed in acute serum samples collected on 2^{nd}-5^{th} day of fever to detect viral RNA. Paired serum samples collected 2 weeks apart were tested using Panbio® IgM capture enzyme linked immunosorbant assay (ELISA) for IgM in acute and convalescent phase of the disease.

Eight (18%) patients were confirmed having DF by RT-PCR and paired IgM. Another 5 patients had positive IgM in acute and/or convalescent sera but did not show rising optic density (OD) value in ELISA and these patients were not considered as having confirmed DF. All other samples were negative for RT-PCR and IgM in acute and convalescent sera.

Higher amount of un-confirmed cases reflects over diagnosis of DF during an epidemic. Serological results show that, persistent positivity of IgM for 2-3 months after a resent exposure to the dengue virus (DENV) may gives positive results in non-dengue cases. This reflects the necessity of detecting rising IgG titre in paired sera to make an immunologically sound diagnosis and to overcome the possibility of making a wrong diagnosis if sera are tested only for DENV specific IgM.

Key words: DF, DENV genotypes, DENV IgM, DENV RNA, RT-PCR, ELISA