

**SERO-DIAGNOSIS OF DENGUE VIRUS IN DIFFERENT
HOSPITALS OF NEPAL**

A

Dissertation

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(Environment and Public Health)

By

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LETTER OF RECOMMENDATION

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ABSTRACT

Dengue fever (DF) is an emerging mosquito borne viral disease and important public health problem in low land Terai region which is also moving towards hilly region in Nepal. This study was designed to determine the sero-prevalence of dengue virus infection during period (June–November) of 2010 in Nepalese patients with fever visiting hospitals of Birganj, Damouli, Biratnagar, Dhading Besi and Chitwan.

The sero-prevalence of dengue virus specific IgM was determined by enzyme linked immunosorbent assay (ELISA). Serum samples were collected from 289 patients visiting hospitals with history of fever and clinically suspected Dengue fever. The anti-dengue IgM positivity was found to be 8.99%. The positive dengue cases were higher in male (10.8%) as compared to female (7.1%) though it was no statistically significant ($P>0.05$). Among different age groups, the highest positive cases (12.3%) were from age group below 15 years followed by above 50 years age group with 8.3%. Out of 5 hospitals, the highest positive cases were in Tanahu District Hospital, Damouli (23.8%) followed by Bharatpur Hospital, Chitwan (22.2%). Age and gender were found to be independent predictors. The highest numbers of dengue positive cases were in occupation group business (13.3%) followed by agriculture (12.7%). So prevalence of Dengue Virus infection is increasing and proper control measure should be provided.

Key words: Dengue fever, IgM Capture ELISA, RT-PCR, Terai region.

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LIST OF ABBREVIATIONS

ADE:	Antibody-dependent enhancement
cDNA:	Complementary DNA
CFT:	Complement Fixation Test
DEN (-1, -2, -3 & -4):	Dengue (-1, -2,-3 & -4)
DF:	Dengue Fever
DHF:	Dengue Hemorrhagic Fever
DNA:	Deoxyribonucleic Acid
DSS:	Dengue Shock Syndrome
DV:	Dengue Virus
DVI:	Dengue Virus Infection
ELISA:	Enzyme Linked Immunosorbent Assay
HI:	Hemagglutination Inhibition
HRP:	Horse reddish peroxidase
IFA:	Immunofluorescence Assay
IFN- :	Interferon-
MA:	Microneutralization Assay
MAb:	Monoclonal Antibody
NT:	Neutralization Test
ORF:	Open Reading Frame
PA:	Particle Agglutination
PAHO:	Pan American Health Organization
PCR:	Polymerase Chain Reaction
PRNT:	Plaque reduction and neutralization test
RNA:	Ribonucleic Acid
RT-PCR:	Reverse Transcriptase PCR
SEARO:	South East Asian Regional Office
TAE:	Tris-acetate-EDTA
TMB:	Tetramethylbenzidine