

**SERO-EPIDEMIOLOGY OF JAPANESE ENCEPHALITIS IN SOME
SELECTED HOSPITALS OF NEPAL**

A

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Master of Science in Microbiology
(Environment and Public Health)

By

KRISHNA PRASAD PANT

Central Department of Microbiology

Tribhuvan University

Kirtipur, Kathmandu, Nepal

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RECOMMENDATION

This is to certify that **Mr. Krishna Prasad Pant** has completed this dissertation work entitled “**Sero-epidemiology of Japanese encephalitis in some selected hospitals of Nepal**” as a partial fulfillment of **M.Sc. Degree in Microbiology (Environment and Public Health)** under our supervision, to our knowledge this work has not been submitted for any other degree.

.....

Mr. Binod Lekhak, M.Sc.

Lecturer

Central Department of
Microbiology Tribhuvan

University, Kirtipur,

Kathmandu, Nepal

Date:

.....

Dr. Basu Dev Pandey, PhD

Senior Medical Officer

Sukra Raj Tropical and
Infectious Disease

Hospital, Teku,

Kathmandu, Nepal

Date

CERTIFICATE OF APPROVAL

On the recommendation of **Mr. Binod Lekhak** and **Dr. Basu Dev Pandey**, this dissertation work of **Mr. Krishna Prasad Pant** is approved for the examination and is submitted to the Tribhuvan University in partial fulfillment of the requirements for **M.Sc. Degree in Microbiology (Environment and Public Health)**.

Date:

.....
Dr. Dwij Raj Bhatta, M.Sc., PhD
Head
Central Department of Microbiology
Tribhuvan University
Kirtipur, Kathmandu,
Nepal

BOARD OF EXAMINERS

Recommended by:

.....

Mr. Binod Lekhak

Supervisor

.....

Dr. Basu Dev Pandey

Supervisor

Approved by:

.....

Dr. Dwij Raj Bhatta

Head of Department

Examined by:

.....

Dr. Basista Prasad Rijal

External Examiner

.....

Mr. Megha Raj Banjara

Internal Examiner

Date:

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Krishna Prasad Pant

ABSTRACT

Japanese encephalitis (JE) is one of the major public health problems in Nepal especially in terai region and other non endemic regions where the sporadic cases of JE occurs annually. The diagnosis of JE in Nepal is based on clinical signs and symptoms. The objective of this study was to find the epidemiological status of Japanese encephalitis in some selected hospitals of Nepal. The laboratory diagnosis of JE is made with IgM capture enzyme linked immunosorbent assay (ELISA).

In this study, a total of 267 serum samples from suspected acute encephalitic syndrome (AES) cases and viral fever cases were collected and confirmed by IgM capture ELISA. Among 267 serum samples, 242(90.6%) were clinical suspects of AES and 25(9.4%) were clinical suspects of viral fever. Out of 242 AES cases, 84(34.7%) were found to be positive for the presence of anti-JEV IgM and out of 25 viral fever cases, nine (36%) were found to be positive for the presence of anti-JEV IgM. Out of 267 cases, 93(34.8%) were found to be positive for the presence of anti-JEV IgM. Among positive cases, 60(65.5%) of total positive cases were male and rest 33(35.5%) of total positive cases were female. The age group 15-50 years had both the highest number of positive cases and sero-positivity. The children had both lowest number of positive cases and sero-positivity. Males and adults are more affected by the disease. Both the highest numbers of positive cases and sero-positivity was observed in Tribhuvan University Teaching Hospital.

This study concludes that the sero-positivity is quite higher than that of national data. The epidemiological pattern of the disease has been changed in hospitals of Nepal. Continuation of active surveillance in JE endemic areas should be strengthened.

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LIST OF ABBREVIATIONS

ABC	Avidin biotin system
AES	Acute encephalitis syndrome
AFP	Acute flaccid paralysis
BZH	Bheri Zonal Hospital
CDC	Centre for Disease Control and Prevention
CF	Complement fixation
CFR	Case fatality rate
CI	Case incidence
CMI	Cell mediated immunity
CNS	Central nervous system
CSF	Cerebrospinal fluid
Cx.	<i>Culex</i>
DoHS	Department of Health Services
E	Envelope protein
EDCD	Epidemiology and Disease Control Division
EICRC	Everest International Clinic and Research Centre
ELISA	Enzyme Linked Immunosorbent Assay
EPI	Expanded programme of immunization
EWARS	Early Warning Reporting System
Ha-Ny beads	Hydroxyapatite- coated nylon beads
HI	Haemagglutination Inhibition
HMIS	Health management Information System
IFA	Indirect fluorescent antibody
IgG	Immunoglobulin G
IgM	Immunoglobulin M
IPD	Immunization preventable diseases
JE	Japanese encephalitis
JEV	Japanese encephalitis virus
LAMP	Loop-Mediated Amplification Assay

LZH	Lumbini Zonal Hospital
MAb	Monoclonal antibody
MAC-ELISA	IgM antibody capture ELISA
MOAC	Ministry of Agriculture and Co-operative
MoHP	Ministry of Health and Population
NS	Non-structural protein
NTA	Neutralization assay
NTR	Nontranslated region
PCR	Polymerase chain Reaction
PHK	Primary Hamster Kidney
PrM	Pre-membrane protein
PRNT	Plaque reduction neutralization test
RT-PCR	Reverse Transcriptase Polymerase Chain Reaction
RT-PCR	Reverse transcriptase polymerase chain
SEAR	South East Asian Regional
SLE	St. Louis encephalitis
TUTH	Tribhuvan University Teaching Hospital
WDR	Western Development Region
WHO	World Health Organization
WNV	West Nile Virus

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