

**SEROPREVALENCE OF IgM and IgG ANTIBODIES
AGAINST THE AGENTS OF TORCH INFECTIONS
AMONG THE PATIENTS VISITING OM HOSPITAL AND
RESEARCH CENTER**

**A
DISSERTATION
SUBMITTED TO THE CENTRAL DEPARTMENT OF MICROBIOLOGY
TRIBHUVAN UNIVERSITY**

**IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD
OF THE DEGREE OF MASTER OF SCIENCE IN MICROBIOLOGY
(MEDICAL)**

**BY
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KIRTIPUR, KATHMANDU, NEPAL
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RECOMMENDATION

This is to certify that **Mr. Rajeshwar Ray** has completed this dissertation work entitled **“Seroprevalence of TORCH infections among the patients visiting OM Hospital and Research Centre”** as a partial fulfillment of Master of Science Degree in Microbiology under our supervision. To our knowledge, this work has not been submitted for any other degree.

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ACKNOWLEDGEMENT

First of all, I would like to express my earnest gratitude and heartfelt appreciation to my supervisor, **Dr. Dwij Raj Bhatta, Head of Central Department of Microbiology, Tribhuvan University** for his constant encouragement, remarkable guidance and incredible support in the completion of this research.

I would equally like to express my sincere gratitude and heartfelt appreciation to my respected supervisor **Prof. Bharat Jha**, for his constant inspiration, guidance. I also acknowledge him for providing laboratory facilities during my research work

I am much obliged to my respected teachers of Central Department of Microbiology, Tribhuvan University for their support and help.

I am indebted to **Dr. Yogendra Prashad Dev (Senior Consultant Pathologist)** for his constant encouragement and overwhelming support during the whole laboratory work at OM Hospital. I am also thankful to **Madam Dipika Dali (Lab Incharge)** and all the staffs of OM Hospital and Research Centre for their help and co-operation through out the laboratory work.

I would like to acknowledge my friends **Santosh Thapa, Ranjit K. Shah, Rupesh P. Mandal, Rama Khadka, Nanda Maya Mali** for their supportive contributions during this research work. I am equally thankful to my friend **Mr. Ramakant Yadav** for their help during computer settings.

Finally, I am greatly obliged to **my parents** without whose constant inspiration and unconditional support, this work would not have been completed.

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ABSTRACT

TORCH infection is a serious threat to human health and is a global issue. The primary infection with TORCH in pregnant women can lead to serious complication (fetal loss, malformation, still child birth) which may initially asymptomatic. In the present study, 161 suspected patients' (151 females and 10 males) serum samples were examined for the prevalence of anti TORCH IgM and IgG using ELISA technique (GB corp- Taiwan) during 17th July 2009 to 30th March 2010. In the light of investigation of blood samples, anti toxoplasmosis IgG was found in 26.4 %, IgM in 0.6 % and both IgG + IgM in 0.6 %. At the same time, anti Rubella IgG was found out in 59.3 %, IgM in 0.7 % and both IgG + IgM in 0.7 %. Anti CMV IgG was discovered in 32.7 %, IgM in 6 % and both IgG + IgM in 2 %. Moreover, anti HSV-1 IgG was found out in 5.4 %, IgM in 8.7 % and both IgG + IgM in 0 %. Anti HSV-2 IgG positivity in 25.5 %, IgM in 16.8 % and both IgG + IgM in 4 %. Out of 4 infants, 1(25%) was IgM positive. Sex wise analysis showed high prevalence rate in female in comparison to male and prevalence rate was reported highest most commonly in sexually active age group. In conclusion, wide range of population still susceptible to TORCH. High value of immune response to Rubella and HSV-2 was observed in term of IgM and both IgM + IgG, responsible for major cause of congenital problems. Higher prevalence rate was observed in female than male in child bearing age. So, Health education concerning the preventive measures against TORCH is needed.

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LIST OF ABBREVIATIONS

| | |
|-------|---|
| µl | Microlitre |
| AIDS | Acquired Immune Deficiency Syndrome |
| BOH | Bad Obstetric History |
| CAR | Congenitally Acquired Rubella |
| CDC | Centre for Disease Control and Prevention |
| CMI | Cell Mediated Immunity |
| CMV | Cytomegalovirus |
| CNS | Central Nervous System |
| CRS | Congenital Rubella Syndrome |
| CSF | Cerebro Spinal Fluid |
| CT | Computed Tomography |
| DNA | Deoxyribo Nucleic Acid |
| EEGs | Electroencephalograms |
| EIA | Enzyme Immuno Assay |
| ELISA | Enzyme Linked Immunosorbent Assay |
| HBsAg | Hepatitis B surface Antigen |
| HIV | Human Immuno Deficiency virus |
| HSV | Herpes Simplex Virus |
| IF | Immuno Fluorescence |
| IFAT | Indirect Fluorescent Antibody Technique |
| Ig | Immunoglobulin |
| IgA | Immunoglobulin A |
| IgG | Immunoglobulin G |
| IgM | Immunoglobulin M |
| IU | International Unit |
| LP | Lumbar Puncture |
| MMR | Mumps Measles Rubella |

| | |
|----------|---|
| MRI | Magnetic Resonance Imaging |
| NHANES | National Health and Nutrition Examination Surveys |
| NPHL | National Public Health Laboratory |
| PCR | Polymerase Chain Reaction |
| RNA | Ribo Nucleic Acid |
| RSA | Recurrent Spontaneous Abortions |
| RT-PCR | Reverse Transcriptase-Polymerase Chain Reaction |
| STI | Sexually Transmitted Infections |
| TORCH | <i>Toxoplasma</i> , Rubella, Cytomegalovirus and Herpes Simplex Virus |
| TSL-PAMF | <i>Toxoplasma</i> Serology Laboratory-Palo Alto Medical Foundation |
| UK | United Kingdom |
| US | United States |
| VDRL | Venereal Disease Research Laboratory |
| VZV | Varicella Zoster Virus |

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