

**THE SEROPREVALENCE OF ANTI – TOXOPLASMA IgG ANTIBODIES IN  
MALAYSIA**

**WAN SHAHRIMAN YUSHDIE BIN WAN YUSOFF**

**BACHELOR OF SCIENCE (HONS.) MEDICAL TECHNOLOGY**

**FACULTY OF HEALTH SCIENCES**

**UNIVERSITI TEKNOLOGI MARA**

**APRIL 2007**

This Final Year Project Report entitled **“The Seroprevalence of Anti –Toxoplasma IgG Antibodies in Malaysia”** is submitted by Wañ Shahrman Yushdie Bin Wan Yusoff, as partial fulfillment for the Degree of Bachelor of Science (Hons.) Medical Technology in the Faculty of Health Sciences.

---

**Prof. Madya Wan Kamil Bin Wan Mohamad**  
Supervisor  
Faculty of Health Science  
Universiti Teknologi MARA

---

**En. Zed Zakari**  
Head of Programme  
BSc. (Hons.) Medical Technology  
Universiti Teknologi MARA

---

**Prof. Dr. Abdul Rahim Md. Noor**  
Dean  
Faculty of Health Science  
Universiti Teknologi MARA

Date: \_\_\_\_\_

## TABLE OF CONTENTS

	<b>Page</b>
<b>ACKNOWLEDGEMENT</b>	iii
<b>TABLE OF CONTENTS</b>	iv
<b>LIST OF TABLES</b>	vi
<b>LIST OF FIGURES</b>	vii
<b>LIST OF ABBREVIATIONS</b>	viii
<b>ABSTRACT</b>	ix
<b>CHAPTER</b>	
<b>1. INTRODUCTION</b>	
<b>1.1 Introduction</b>	<b>1</b>
<b>1.2 Objectives of the study</b>	<b>3</b>
<b>2. LITERATURE REVIEW</b>	
<b>2.1 Life-cycle</b>	<b>4</b>
<b>2.2 Transmission</b>	<b>5</b>
<b>2.3 Epidemiology</b>	<b>7</b>
<b>2.4 Pathogenesis and pathogenicity</b>	<b>9</b>
<b>2.5 Clinical manifestation</b>	<b>11</b>
<b>2.6 Diagnosis</b>	<b>13</b>
<b>3. MATERIALS AND METHODS</b>	
<b>3.1 Study group</b>	<b>16</b>

## ABSTRACT

### **The seroprevalence of anti – *Toxoplasma* IgG antibodies in Malaysia**

By

**Wan Shahrman Yushdie B Wan yusoff**

**Supervisor: Prof. Madya Wan Kamil B Wan Mohamad**

*Toxoplasma gondii* (*T.gondii*) is an obligate intracellular protozoan that infects a wide variety of vertebrate hosts including human. There are four groups of individuals in which diagnosis of toxoplasmosis is most critical: i) pregnant women who acquire their infection during gestation, ii) fetuses and newborns who are congenitally infected, iii) immunocompromised patients, and iv) those with choriorenitis.

This study was carried out to determine the seroprevalence of anti-*Toxoplasma* IgG antibodies in Malaysia. A random 150 blood samples were analysed using the bioelisa-toxo IgG (Biokit, Spain), which is widely used in the diagnosis of toxoplasmosis. The results showed that 56 percent tested positive for IgG. A racial breakdown showed that the Indians had the highest percentage of seropositivity compared to other ethnic group. Study on gender showed males have higher seropositivity than females. The study comprised of many age groups. *Toxoplasma gondii* was found to infect patient's people irrespective of their ages.

## CHAPTER 1

### INTRODUCTION

#### 1.1 Introduction

*Toxoplasma gondii* is an obligate intracellular protozoan that infects a wide variety of vertebrate hosts including humans. It is classified under phylum Apicomplexa. *T. gondii* causes an opportunistic disease, toxoplasmosis, in individuals with immune dysfunction and congenital disease in infected infants. (Carruther, 2002)

Toxoplasmosis during pregnancy can cause congenital infection and manifest as mental retardation and blindness in the infant. The severity of fetal disease varies inversely with the gestational age at which maternal infection occurs (Tenter, 2000).

Between 20% and 60% of the population of most countries are infected with the protozoan *Toxoplasma gondii* (Flegr, 2004). Seroprevalence estimated for human population varies greatly among different countries, among different geographical areas within one country, and among different ethnic groups living in the same area (Tenter, 2000).

Seroprevalence of *T.gondii* infection in women at childbearing age is found to be between 4%-100%. Incidence of primary maternal infection during pregnancy varies in a range of 1 to 310 per 10,000 pregnancies in the populations in Europe, Asia, Australia, and the Americas (Tenter, 2000). In Malaysia, screening for congenital toxoplasmosis has not been implemented. It is also not known whether it is cost effective to implement such a regulation. In a study performed in our country, seroprevalence of *T.gondii* infection in patients attending antenatal clinic age is 43% (Vashu, 2000).