

**UNIVERSITI TEKNOLOGI MARA**



**PREVALENCE OF GROUP B *STREPTOCOCCUS* IN  
HIGH VAGINAL SWAB SPECIMEN AT UNIVERSITI  
KEBANGSAAN MALAYSIA MEDICAL CENTRE  
(UKMMC).**

**NUR SYAHIRAH BINTI LILA ZAM ZAM**

**Dissertation submitted in partial fulfillment of the requirements for  
Diploma in Medical Laboratory Technology**

**Faculty of Health Sciences**

**September 2014**

## DECLARATION

I declare that the work in this thesis/dissertation was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the result of my own work, unless otherwise indicated or acknowledged as referenced work. This thesis has not been submitted to any other academic institution or non-academic institution for any degree or qualification.

I, hereby, acknowledge that I have been supplied with the Academic Rules and Regulations of Universiti Teknologi MARA, regulating the conduct of my study and research.

Name of Student : NUR SYAHIRAH BINTI LILA ZAM ZAM

Student I.D. No. : 2012299988

Programme : DIPLOMA IN MEDICAL LABORATORY TECHNOLOGY

Faculty : FACULTY OF HEALTH SCIENCE

Dissertation Title : PREVALENCE OF GROUP B *STREPTOCOCCUS* IN HIGH VAGINAL SWAB SPECIMEN AT UNIVERSITI KEBANGSAAN MALAYSIA MEDICAL CENTRE (UKMMC).

Signature of Student :

Date :

## ABSTRACT

The aim of the study was to determine the prevalence of Group B Streptococcus in a high vaginal swab specimen in Universiti Kebangsaan Malaysia Medical Centre (UKMMC). Group B Streptococcus (GBS), also known as '*Streptococcus agalactiae*' is a gram positive streptococcus characterized by the presence of Group B Lancefield antigen. Group B Streptococcus is a part of normal flora of the gut and frequently colonizes the vagina of 20-40% women. Polysaccharide antiphagocytic capsule of GBS is the main virulence factor. Women with GBS colonization are at increased risk of GBS colonization in subsequent pregnancy. Group B Streptococcus also is an important cause of adult and neonates infection which required treatment with antibiotics. According to previous study, the prevalence of GBS was 30% among pregnant women. The study design was a retrospective study involving collection of high vaginal swab (HVS) data from January 2014 until April 2014 at UKMMC. The number of HVS samples positive with GBS in January, February, March and April were 44, 51, 68 and 47 respectively. In UKMMC, Malay women had the highest percentage of HVS positive with GBS isolates 76.47%, while for Chinese and Indian were 16.18% and 3.90% respectively followed by others 3.45%. All isolates were sensitive to ampicillin and ceftriaxone but 76% resistant to bacitracin. Group B Streptococcus were 99%, 90% and 88% susceptible towards penicillin, erythromycin and clindamycin respectively. Our findings show that the prevalence of GBS positive isolates from January 2014 until April 2014 is 13.43%. This results was based on the total HVS sample collected from January until April 2014.

## ACKNOWLEDGEMENT

Firstly , I thank to Allah for the mercy and guidance through the various stages of my academic career.

Appreciation goes to the following names for their continuous support and help towards the completion of the dissertation entitled “Prevalence of Group B Streptococcus In High Vaginal Swab Specimen at Universiti Kebangsaan Malaysia Medical Centre (UKMMC)”. First and foremost I would like to express sincere gratitude to my supervisor, Sir Zakaria Bin Ismail and my two co-supervisor, Datin Dr. Anita Bt Sulong and Dr. Zalina Bt Ismail for their guidance, encouragements and support throughout the different stages of this work. Special thanks goes to Dr. Zuraidah Bt Che Man for her valuable contribution to help me to complete the task given.

I would also like to acknowledge with thanks to all of the science officer, staff and medical laboratory technicians of Universiti Kebangsaan Malaysia Medical Centre (UKMMC). I extend my sincere thanks to Department of Microbiology authorities for allowing me to conduct the study at UKMMC and providing me with the necessary support.

Lastly, special thanks goes to my parents and all good friends who had faith on me and encourage me constantly about my study.

## TABLE OF CONTENTS

Chapter	Content	Page
	<b>TITLE PAGE</b>	
	<b>DECLARATION</b>	i
	<b>APPROVAL</b>	ii
	<b>ABSTRACT</b>	iii
	<b>ACKNOWLEDGEMENT</b>	v
	<b>TABLE OF CONTENTS</b>	vi
	<b>LIST OF TABLES</b>	viii
	<b>LIST OF FIGURES</b>	ix
	<b>ABBREVIATIONS</b>	x
<b>1.0</b>	<b>INTRODUCTION ( CHAPTER ONE )</b>	
1.1	Background of the study	1
1.2	Problem statement	3
1.3	Objective	4
1.3.1	General objective	4
1.3.2	Specific objective	4
<b>2.0</b>	<b>LITERATURE REVIEW ( CHAPTER TWO )</b>	
2.1	Group B Streptococcus strain	5
2.1.1	GBS in pregnant women	5
2.1.2	GBS in non-pregnant women	6
2.1.3	Bacteriology of GBS	7
2.1.4	Antimicrobial susceptibility of GBS.	7
2.1.5	Detection of GBS colonization and diagnosis of infection.	8