

**UNIVERSITI TEKNOLOGI MARA**



**Prognostic Indicators for Dengue Infection Severity**

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

**Faculty of Health Sciences**

**September 2014**

## ABSTRACT

### PROGNOSTIC INDICATORS FOR DENGUE INFECTION SEVERITY

**Background:** Dengue fever can be classified into three types, which are dengue fever, dengue hemorrhagic fever, and dengue shock syndrome. This fever can be further categorized into either primary dengue infection or secondary dengue infection. In order to diagnose dengue, there are several tests that can be performed such as serology, biochemical, and hematological. This study is conducted based on hematological study only, where the hematocrit, platelet count and leucocyte count is determined. **Methods:** A comparative study is conducted in a general hospital, which is Hospital Sultan Ismail, Johor Bharu. All the data collected from the hospital is compared to determine the severity of the three types of dengue. **Results:** The platelet count for all types of dengue is low, leucocyte count is mostly low for dengue fever and normal for dengue hemorrhagic and dengue shock syndrome, and the hematocrit level is mostly normal for all types of dengue. **Conclusion:** There is no significant difference on the platelet count, leucocyte count, and hematocrit levels between dengue fever (DF), dengue hemorrhagic fever (DHF), and dengue shock syndrome (DSS).

Key words : *dengue, hemorrhagic, shock*

## **ACKNOWLEDGEMENT**

I would like to thank all of the people who made this dissertation possible, starting with my lecturer in the University Teknologi Mara, Miss Nor Raihan, who guide me throughout all the process of making from proposal until this dissertation. Secondly, to all staffs of Hospital Sultan Ismail, Johor Bharu, especially Cik Nurul Shuhada, Science Officer for Microbiology Lab and its staff, who give me the data needed for this study, and staff from Hematology Lab who give me a helping hand whenever I need. I would also like to thank my friends, especially who is undergoing internships in the same hospital as mine, for guiding me a lot in terms of ideas and mentally support. Next, a big thank you to my parents for giving me support and providing me funds in order to finish and complete this dissertation. Lastly, I would like to thank all who involved in the making of this final year project

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## CHAPTER 1

### INTRODUCTION

#### 1.1 BACKGROUND OF THE STUDY

Mosquito-transmitted disease, dengue, is the most rapidly viral disease in the world, which found mainly in many tropical and subtropical regions. This virus can be serotyped into four, which are known as Dengue Type 1, 2, 3 and 4 and belong to the *Flaviviridae* family. Dengue is spread by a type of infected vector known as *Aedes aegypti*. This mosquito is active during the day, particularly in the early morning and in the evening. The mode of transmission is by the vector biting an infected person, and then bites another human, and the cycle continues (NHS, 2012). The incubation period for dengue varies, but usually from 3-14 days. Once a person is infected by one serotype, he or she will produce a long-term immunity against reinfection by that same serotype. However, if a person is infected again by different serotypes, he or she may develop the more severe form of the illness (Northern Territory Government, 2013).

Generally, dengue fever can be classified into two types, which are dengue fever and dengue hemorrhagic fever (DHF). The difference between these fevers is DHF occurs with the presence of increased vascular permeability and fragility, while dengue fever is absent with that (Management of Dengue Fever in Children, 2004). Next, DHF can be further classified into two, which are DHF with no shock and DHF with shock or also known as dengue shock syndrome (DSS). A person with one of these viral infections may have asymptomatic and classical signs or symptoms according to the types of the dengue fever. The symptoms of dengue fever can be characterized by mild to high fever, severe headache, pain behind the eyes, muscle and joint pain, and skin rash, which appears three to four days after the onset of fever (World Health Organization, 2014). DHF is a development from dengue fever. According to Centers for Disease Control (2009), DHF is defined as fever or recent history of fever lasting 2-7 days, any