



**DETECTION OF HEPATITIS C VIRUS CO-INFECTION IN HEPATITIS B
VIRUS POSITIVE PATIENT**

By

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DECLARATION

I hereby declare that this thesis is based on my original work. I also declare that this thesis has not been submitted previously or currently by any other degree student at UiTM or other institutions.

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ABSTRACT

Detection of Hepatitis C Virus Co-Infection in Hepatitis B Virus Positive Patient

Hepatitis C virus co-infection can become troublesome to any patient infected especially when the patient had already being diagnosed with hepatitis B virus infection. It was estimated that 130 million people globally has been infected with hepatitis C virus (HCV) and mostly of the patient serve as reservoir for transmission to healthy people. While in ASEAN region, there was no significant study was done for the HCV infection among the population. The study is done to identify HCV co-infection in positive Hepatitis B virus (HBV) patient among the Malaysian population. In this study, the total number of HBV patient that is positive with HCV co-infection is 14 out of 37 that account 37.84 % from the total sample. Whereas, another about 62.16 % (23 people) not developing HCV co-infection phenomena in patient with positive HBV infection. From other point of view, the distribution of hepatitis C virus detection between gender of the patient that is 9 female patient (24.3%) and 5 male patient (13.5%).Based on the race demographic data, it revealed that Chinese have the highest number of HCV positive detection that is 6 people (6.2 %), followed by Malay with 5 people (13.5%), Other races with 2 people (5.4%) and lastly Indian race with 1 person (2.7%). Based on the data between the number of HCV detection among the different diagnosis of HBV positive patient, 7 people (18.9%) with hepatitis disease positive with HCV detection by using real time PCR , followed by 5 (13.5%) people with chronic hepatitis disease, 2 (5.4%) people with cirrhosis disease and none from the people with hepatocellular carcinoma infect with HCV. The use of real time PCR assay had demonstrated a highly sensitive and specific method to detect HCV in patient sample with positive HBV virus. As for the conclusion, the result produce clearly show that the HCV can became a co-infection to the patient that had already being infect with HBV.

Keywords: detection, hepatitis C virus, co-infection, hepatitis B virus, positive

CHAPTER 1

INTRODUCTION

1.1 Background of Study

Hepatitis C is a liver disease that is caused by hepatitis C virus (HCV) which can cause both acute and chronic hepatitis infection. It is estimated that 130 million people globally has been infected with hepatitis C virus and mostly of the patient serve as reservoir for transmission to healthy people (Alter, 2007). Apart from hepatitis A and hepatitis B, the HCV is the most important causal causative agent and has emerged as a major public health problem (Pembrey, L., M.L. Newell, 1999). Since because of insufficient data on the prevalence of HCV in many country, the estimation of HCV incidence is based on the weighted averages for region rather than individual country data (Alter, 2007).

The highest prevalence of HCV in the world occur in Egypt, which the prevalence of infection rise steadily with age, between 12% and 18% of the entire Egypt population (Zahran, Badary, Agban, & Abdel Aziz, 2010). However, the highest prevalence according to the region is in Africa (5.3%), followed by the East Mediterranean (4.6%), western Pacific (3.9%), and South East Asia (2.15%) and Europe is thought to have the lowest prevalence of HCV (1.03%) (Uhanova, Tate, Tataryn, & Minuk, 2012). In Europe, the epidemiology of HCV is progressively changing and the epidemiological parameters (incidence, prevalence, genotype distribution and disease transmission patterns) have evolved substantially during the last 15 years (Esteban, Sauleda, & Quer, 2008). In North America, the prevalence is calculated at 1.6% in the USA and 0.8% in Canada.