FAMILIAL HEPATITIS (B) AND (C) VIRUS INFECTION AMONG INFECTED CHILDREN WITH HEMATOLOGICAL DISEASES

Thesis
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By

Marwa Gomaa Dawood El-Feky

Under supervision of

Prof. Dr. Manal Hamdy El-Sayed
Professor of Pediatrics
Faculty of Medicine
Ain Shams University

Prof. Dr. Moustafa Kamal El-Din Mohamed
Professor of Community medicine
Faculty of Medicine
Ain Shams University

Dr. Naglaa Ahmed Arafa
Lecturer of community medicine
Faculty of Medicine
Ain Shams University

Faculty of Medicine
Ain Shams University
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بسم الله الرحمن الرحيم

الحمد لله الذي هدانا لهذا وما كنا لنهتدي لولا أن هدانا الله

الأعراف ٤٣

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LIST OF ABBREVIATIONS

+ve	**Positive**
-ve	**Negative**
AB	**Antibody**
anti-HBc	**hepatitis B core antibody**
anti-HBe	**hepatitis B e antibody**
anti-HBs	**Hepatitis B surface antibody**
anti-HCV	**Anti-hepatitis c virus**
AVH	**Acute viral hepatitis**
bDNA	**Branched DNA**
CDC	**Centers for Disease Control**
CHB	**Chronic hepatitis B**
CLD	**Chronic liver disease**
DNA	**Deoxy nucleic Acid**
EDHS	**Egypt Demographic and Health survey**
EIAs	**Enzyme immuno-assays**
ELISA	**Enzyme Linked Immunosorbent Assay**
EPI	**Expanded Program of Immunization**
GBD	**Global burden of disease**
HBeAg	**Hepatitis B virulent antigen**
HBIG	**Hepatitis B Immune Globulin**
HBsAb	**hepatitis B surface antibody**
HBsAg	**Hepatitis B surface antigen**
HBV	**Hepatitis B Virus**
HCC	**Hepatocellular carcinoma**
HCV	**Hepatitis C virus**
HCV RNA	**Hepatitis c virus- ribo nucleic Acid**
HCWs	**Health care workers**

HIV	**Human Immune Deficiency Virus**
HLA	**Human leukocyte antigen**
IDUs	**Injection drug users**
IgG	**Immuno-globulin IgG**
IgM	**Immuno-globulin IgM**
NHANESIII	**3rd National Health and Nutrition Examination survey**
NHTMRI	**National Hepatology and Tropical Medicine Research Institute**
PAT	**Parenteral anti-schistosomiasis treatment**
PCR	**Polymerase chain reaction**
PY	**Person-years**
RNA	**Ribo-nucleic acid**
STD	**Sexually transmitted disease**
STDs	**Sexually transmitted diseases**
TMA	**Transcription-mediated amplification**
US	**United states**
VHPB	**Viral Hepatitis Prevention Board**
WGO	**World Gastroenterology Organization**
WHO	**World Health Organization**

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Introduction

Hepatitis B virus (HBV) is a serious public health problem worldwide and major cause of chronic hepatitis, cirrhosis, and hepatocellular carcinoma (HCC). It was estimated that approximately 2 billion people have serological evidence of past or present HBV infection **(Hou et al, 2005).** An estimated 350 million persons worldwide are chronically infected with HBV **(Lavanchy, 2004).**

Egypt is considered to be a region of intermediate prevalence for HBV infection with a reported figure of 4.5% **(Shaaban et al, 2007).**

Hepatitis C virus (HCV) infection is also a worldwide problem. It is estimated that about 170 million people, with a prevalence of 3% of the world's population, are infected with HCV **(Poynard et al, 2003)**. The highest prevalence rate in the world is in Egypt; according to the most recent nation-wide survey of HCV in Egypt which was performed in 2008 on individuals aged 15-59. The prevalence of HCV antibodies (denoting past exposure) was 14.7%, while the prevalence of HCV Ribo-nucleic acid (RNA) (indicating current infection) was 9.8%, the prevalence is higher among men, in rural areas, and in older age groups **(El-Zanaty and Way, 2009).**

HBV is transmitted by percutaneous or mucosal exposure to infected blood or other body fluids. HBV transmission has been observed with numerous forms of human contact: perinatal, household, sexual, needle-sharing, and occupational (**Shepard et al, 2006)**.

Intrafamilial HBV infection is common in endemic areas, and both vertical transmission during the perinatal period as well as horizontal transmission in early childhood has been shown to be the major transmission routes **(Datta et al, 2006).**

As regard HCV, unsafe therapeutic injections and blood transfusions are thought to be the major routes of transmission **(Alter, 2006).** However, recent studies in highly endemic areas have shown that a substantial proportion of HCV infections, particularly in children, cannot be accounted for by iatrogenic factors, strongly suggesting the involvement of other modes of transmission **(Arafa et al, 2005**). Finally, several studies have reported that HCV infection may cluster in families or households, based on the higher prevalence of HCV infection among family members of infected cases (mainly patients with chronic liver diseases, hemophilia, or on hemodialysis) than in controls **(Mohamed et al, 2005).**

Little is known about possible intrafamilial modes of HCV transmission, particularly in general population from endemic areas.

The aim of the present study is to determine the prevalence of HBV and/or HCV virus in families when a member was identified as HBV and/or HCV virus carrier, the possible routes and risk factors for the intrafamilial transmission of HBV and HCV, and finally to define the family members with the highest risk of infection.

Aim of work:

The aim of this work was to estimate the prevalence of HBV and HCV infections among families of known HBV and or HCV positive children with hematological diseases and identify risk factors for this infection.

Hypothesis:

HBV and or HCV infected children could be a source of infection to their families especially siblings.