



شبكة المعلومات الجامعية

بسم الله الرحمن الرحيم



شبكة المعلومات الجامعية  
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# شبكة المعلومات الجامعية التوثيق الالكتروني والميكرو فيلم





شبكة المعلومات الجامعية

# جامعة عين شمس

التوثيق الالكتروني والميكروفيلم

## قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها  
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# بعض الوثائق الأصلية تالفة

# بالرسالة صفحات لم ترد بالاصل



٢٥٠٤

574,192

# **Incidence Of Hepatitis B & C Infection In Egyptian Population**

***Thesis***

**Submitted in Partial Fulfillment of  
Master Degree in Biochemistry**

***By***

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**Cairo University**

**2006**

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

"وَعَلَّمَكَ مَا لَمْ تَكُنْ تَعْلَمُ وَكَانَ فَضْلُ اللَّهِ  
عَلَيْكَ عَظِيمًا"

سورة النساء (١١٣)

## ***Approval Sheet For Submission***

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Biochemical Studies of hepatitis B, C Infections in Egyptian population

**Name of candidate:**

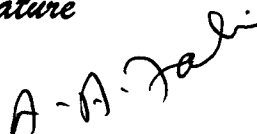
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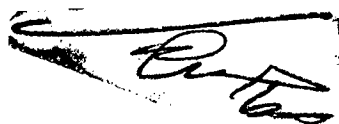
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## ***Acknowledgement***

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## **ABSTRACT**

**Name:** Mohsen Abdel-Hamid Kasem

**Title of Thesis:**

**Biochemical Studies of Hepatitis B, C Infections in Egyptian Population**

**Degree:**

**M.Sc. unpublished thesis, Faculty of Science Cairo University, 2006.**

This study aimed to estimate the prevalence of hepatitis B and hepatitis C in apparently healthy subjects of Egyptian population and to compare between 2<sup>nd</sup> and 3<sup>rd</sup> generation ELISA kits for the detection of HCVAb regarding specificity and sensitivity using a Western blot assay as a good reference for the detection of antibodies to hepatitis C virus. The study was performed through the Ibn-Sena hospital (according to a protocol for guests travel workers to Saudi Arabia) and the critical care department in Cairo university hospitals. This retrospective large scale study was performed on 56,432 ( 54,843 males, 1,589 females) randomly chosen healthy subjects at the outpatients clinic . The Diasorin ELISA kit was used to detect HBsAg in the serum of the donors .The study revealed that the incidence of HBsAg is 3.37% in males, 1.45% in females, i.e. the mean of incidence of HBsAg infections in the Egyptian population is about 2.41%.

The Diasorin 3<sup>rd</sup> generation ELISA kit was used mainly for detecting HCVAb in the Egyptian population . Also the Abbott 2<sup>nd</sup> generation ELISA kit and the Wellcozyme Westen blot assay were performed as confirmatory tests for the detection of HCVAb in the serum of donors . The results of this study revealed that the 2<sup>nd</sup> generation ELISA kit is less sensitive but more specific yielding more false negative

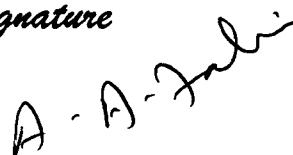
results whereas the ELISA kit of 3<sup>rd</sup> generation is more sensitive but less specific than 2<sup>nd</sup> generation kit showing more false positive results in the detection of HCVAb. The results of the study revealed that the incidence of HCVAb in males is 26.1 %, in females 7.3% . Therefore the mean percentage of HCVAb infections in the Egyptian population is about 18.1 . The percentage of male donors having an association between HCVAb & HBsAg is 0.41, the percentage of female donors with HCVAb & HBsAg is 0.19, i.e. the mean incidence in the Egyptian population (males & females) is about 0.3%. The activity of liver enzymes (ALT, AST, Alk) & bilirubin in urine for patients having HBsAg or HCVAb or HBsAg and HCVAb was studied. ALT, AST, AP. enzymes have an increased activity above the mean of the control group, with a high significance ( $P < 0.001$ ) . Bilirubin levels in urine are significant only in patients infected with HCVAb as well as with HBsAg where it was found 35% .

**Key Words:** Hepatitis, Infection, ALT , AST, AP. , Bilirubin, 2<sup>nd</sup>, 3<sup>rd</sup> generation of ELISA, HCVAb, HBsAg , Western blot assay.

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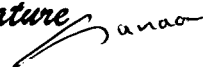
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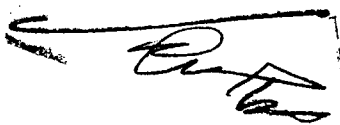
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## Contents

Item	Page
List of Abbreviations	I
Aim of the Work	IV
List of Figures	V
List of Tables	VII
<b><i>Chapter I HBV</i></b>	<b>1-28</b>
• Introduction to HBV-----	1
• Structure of HBV-----	2
• Proteins and Antigenic Components of HBV	4
• Laboratory Diagnosis of HBV -----	8
• Serological Monitoring of HBV Infection -----	11
• Antigens of HBV -----	13
• Antibodies against HBV Infection -----	14
• Protective Immunity against HBV -----	16
• Seroconversion of HBV Infection -----	20
• Transmission & Epidemiology of HBV -----	23
• Antiviral Effects of Interferon -----	23
• Chronic Hepatitis B Virus -----	24
• Gene Mutation of HBV in Chronic Patients -----	25

Item	Page
<b>Chapter II HCV</b>	<b>28-64</b>
•Introduction to HCV -----	28
• Genomic Structure of HCV-----	30
•Genome Organization of HCV -----	34
•Polyprotien Translation of HCV -----	36
•Structural Proteins of HCV -----	37
•Nonstrutural Proteins of HCV -----	39
•Genome Mutations of HCV -----	42
•Genotypes of HCV .....	43
•Incubation Period of HCV Infection -----	46
•Diagnosis of HCV Infection -----	46
•Transmission & Epidemiology of HCV Infection -----	56
•Treatment of HCV -----	60
<b>Chapter III</b>	<b>65-93</b>
• Subjects , Materials & Methods	65
<b>Chapter IV</b>	<b>94-134</b>
• Results	94
<b>Chapter V</b>	<b>135-148</b>
• Discussion	135
<b>Chapter VI</b>	<b>149-153</b>
• Summary & Conclusion	149
<b>Reference</b>	<b>154-181</b>
<b>Arabic Summary</b>	<b>4-1</b>

## ***Abbreviations***

- ◆ AHB : Acute hepatitis B.
- ◆ AP : Alkaline phosphatase .
- ◆ BCIP : Bromo-chloro-indolyl-phosphate
- ◆ BVDV : Bovine viral diarrhea virus.
- ◆ c : core.
- ◆ CAH : Chronic active hepatitis.
- ◆ CCC : Covalently closed circular .
- ◆ CD : Cluster of differentiation.
- ◆ CHB : Chronic hepatitis B.
- ◆ CLD : Chronic liver disease
- ◆ CMV : Cytomegalo virus
- ◆ CPH : Chronic persistent hepatitis.
- ◆ CTL : Cytotoxic T lymphocyte.
- ◆ E<sub>1</sub>E<sub>2</sub> : Envelope 1, 2.
- ◆ ELISA : Enzyme linked immunosorbent assay.
- ◆ EMC : Encephalomyocariditis.
- ◆ ER : Endoplasmic reticulum.
- ◆ GGT :  $\gamma$  glutamyltransferase.
- ◆ HAART : Highly active antiretroviral therapy.
- ◆ HBcAb : Hepatitis B core antibody.
- ◆ HBcAg : Hepatitis B core antigen.
- ◆ HBeAb : Hepatitis Be antibody.
- ◆ HBeAg : Hepatitis Be antigen.



- ◆ HBIG : Hepatitis B immune globulin.
- ◆ HBsAb : Hepatitis B surface antibody.
- ◆ HBsAg : Hepatitis B surface antigen.
- ◆ HBV : Hepatitis B virus.
- ◆ HBX : Hepatitis B X gene .
- ◆ HCC : Hepato cellular carcinoma.
- ◆ HCV : Hepatitis C virus.
- ◆ HCVA b : Hepatitis C virus antibody
- ◆ HIC : Hepatic iron concentration.
- ◆ HII : Hepatic iron index.
- ◆ HIV : Human immunodeficiency virus.
- ◆ HLA I,II : Human leukocytic antigen I,II.
- ◆ HVR : Hyper variable region.
- ◆ IL : Interleukin.
- ◆ ICAH : Idiopathic autoimmune chronic active hepatitis.
- ◆ IgG : Immunoglobulin G.
- ◆ IgM : Immunoglobulin M.
- ◆ INF $\alpha$  : Interferon  $\alpha$
- ◆ IRES : Internal ribosomal entry sites.
- ◆ ISDR : Interferon sensitivity determining region.
- ◆ LDH : Lactate dehydrogenase.
- ◆ MDH : Malate dehydrogenase.
- ◆ MHC : Major histocompatibility complex.
- ◆ NBT : Nitro blue tetrazolium
- ◆ NCR : Non-coding region.
- ◆ NS : Non-structural.