

THE PROBLEM OF VIRAL HEPATITIS  
NON A NON B IN EGYPT

THESIS

Submitted in Partial Fulfilment of the  
Requirements for the Degree of  
Master of Medical Sciences  
in Microbiology

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1987





TO MY FAMILY

### ACKNOWLEDGEMENT

I would like to start by thanking God for his help during all the stages of this work, as a little part of his generous help throughout our life.

I wish to express my deep gratitude to Prof. Dr. Medhat Darwish, Professor of Department of Microbiology and Immunology, Faculty of Medicine, Ain Shams University, for his kind supervision, sincere advice, follow-up guidance and continuous encouragement throughout this work.

I would like to express my deep gratefulness to Colonel Dr. Mahmoud Shaker Ibrahim, Head of Virology Department, Central Medical Research Laboratories, Military Medical Academy, for his instructive supervision, valuable guidance, sincere advice and continuous unfailing support.

I would like to thank all the staff members of the Virology Department, Central Medical Research Laboratories for their sincere help and cooperation.

Last but not least, I would like to thank all the members of Microbiology and Immunology Department, Faculty of Medicine, Ain Shams University for their accepting the involvement of this thesis in the post-graduate program and for their help.

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INTRODUCTION  
AND  
AIM OF WORK

## INTRODUCTION AND AIM OF THE WORK

Viral hepatitis refers to infections of the liver caused by hepatitis A virus (HAV), hepatitis B virus (HBV), non-A, non-B hepatitis viruses (NANB) and hepatitis D (delta) virus. Infections with other viruses such as Epstein-Barr virus (EBV), Cytomegalovirus (CMV) and herpes virus may also present with a hepatic illness. (Cooksley, 1986).

The diagnosis of non-A, non-B viral hepatitis is established mainly by exclusion of the hepatitis viruses A and B, other infections such as Epstein-Barr virus and cytomegalovirus infections must also be excluded. (Bianchi et al., 1983; Hoofnagle et al., 1985; Cooksley, 1986).

Many studies were done in Egypt to estimate the volume of the problem of hepatitis type B, but very scanty studies were done for both virus A and non-A, non-B hepatitis viruses.

### Aim of the work:

Trial for estimation of the volume of the problem of acute non-A, non-B viral hepatitis in Egypt.

# REVIEW OF LITERATURE

REVIEW OF LITERATURE  
HEPATITIS A VIRUS (HAV)

The finding by Feinstone et al. (1973) of virus like particles measuring 27 nm in diameter in fecal extracts of hepatitis A patients immediately taken before or during the acute illness had lead to characterisation of HAV. This finding was confirmed by Maynard et al. (1974), who induced HAV in marmosets, by feeding those marmosets a diet contaminated with hepatitis A particles.

Morphology and biophysical characters:

The use of immunoelectron microscopy was a major step in revealing the morphological characters and development of hepatitis A virus diagnosis. The observation of antibodies to the 27 nm particles was demonstrated in patients experimentally infected with the Ms-1 strain of HAV and patients of several outbreaks of hepatitis A (WHO Tech. Ser., 1977).

It was observed that HAV posses the features of a typical enterovirus, and it is now considered as a member of the picornaviridae family (Sieg1, 1982). Thus hepatitis A virus is classified as type 72 enterovirus belonging to the picornaviridae family (Melnick , 1982).

As regards to structure of HAV, it is a Ribonucleic acid (RNA) virus, 27(28 nm diameter (Melnick , 1982).

Further investigations revealed that HAV is a simple, non enveloped virus with a nucleocapsid designated the hepatitis A antigen (HA Ag). The viral capsid consists of 32 capsomers arranged in an isocahedral confirmation. The unit structure of the capsid antigen is made up of four polypeptides named viral protein (VP) 1, 2, 3, 4. Inside the capsid is a single molecule of single-stranded RNA which is approximately 8,100 nucleotides in length. Most data suggested that the RNA had a positive polarity (proteins are translated directly off of the RNA as with messenger RNA). The 3 end of the RNA is polyadenylated and the 5 end has a small protein, the so called "viral protein, genomic" (VPg), which may aid the virus in attaching to cytoplasmic ribosomes. Fig. ( 1 ) shows the proposed structure of hepatitis A virus. These characteristics are the typical of the picornavirus class that includes the polio and coxacki viruses. (Hoofnagle, 1981).

As regards the stability of HAV, its heat stability is more than the other members of enteroviruses.