

EFFICACY OF HEPATITIS B VACCINE IN BILHARZIAL AND NON BILHARZIAL CHILDREN

THESIS

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by

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"قالوا سبحانك لا علم لنا إلا ما علمتنا إنك أنت العليم الحكيم"

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*To my parents
and
my family*

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ABBREVIATIONS

AIDS : Acquired immunodeficiency syndrome.
ALT : Alanine transferase.
antiHBc : Antibody against hepatitis B core antigen
anti-HBe : Antibody against hepatitis B e antigen
anti-HBs : Antibody against hepatitis B surface antigen
AVH : Acute viral hepatitis
CAH : Chronic active hepatitis
CLD : Chronic liver disease
c DNA : Cloned deoxy ribonucleic acid.
CPH : Chronic persistent hepatitis
DHBV : Pekinduck hepatitis B virus
ELISA / EIA : Enzyme linked immunosorbent assay
GsHV : Ground squirrel hepatitis virus
G.M.T. : Geometric mean titer
HAV : Hepatitis A virus.
HB : Hepatitis B
HBcAG : Hepatitis B core antigen
HBeAg : Hepatitis B e antigen
HBIG : Hepatitis B immunoglobulin
HBsAb : Hepatitis B surface antibody
HBsAg : Hepatitis B surface antigen
HBVDNA : Hepatitis B virus deoxyribonucleic acid
HBx Ag : Hepatitis B x antigen
HCC : Hepatocellular carcinoma

HCV : Hepatitis C virus
HDV : Hepatitis Delta virus
HEV : Hepatitis E virus
HLA : Human leucocyte antigen
HTLV - 3 : Human T lymphocyte virus 3
IgG : Immunoglobulin G
IgM : Immunoglobulin M
ISG : Immune serum globulin
LAV : Lymphadenopathy virus
n An B : Non A non B hepatitis
PCR : Polymerase chain reaction
PDV : Plasma derived vaccine
RIA : Radioimmunoassay
RI BA 2 : Radioimmuno-blot assay 2
RPHA : Reversed passive haemoagglutination
SEA : Soluble egg antigen
S. haematobium : Schistosoma haematobium
S / N = Sample / Negative ratio
S. mansoni : Schistosoma mansoni
THBV : Tree squirrel hepatitis B virus
WHV : Woodchuck hepatitis
YDV : Yeast derived vaccine

**INTRODUCTION
AND
AIM OF THE WORK**

INTRODUCTION AND AIM OF THE WORK

Hepatitis B virus infection is a world-wide disease and is closely correlated with the development of chronic hepatitis, liver cirrhosis and primary hepatocellular carcinoma (WHO, 1987).

In Egypt the problem of HBV infection is worsened due to the presence of schistosomiasis which is endemic in this country. While schistosoma mansoni infection does not severely affect hepatocyte function, the presence of HBV may lead to chronic active or chronic persistent hepatitis (Sherlock, 1975).

Actually, there is no real treatment for HBV infection and the hope for its control depends mainly upon prevention by active vaccination.

It was found that the most immunological response to HBV is directed towards antigenic determinants on the surface of the virus particles HBsAg.

Antibody to HBsAg (HBsAb) is known to protect against reinfection with any HBsAg subtype, if the antibody is directed towards a group specific "a" determinant present on all subtypes of HBsAg.

This has lead to the development of HB vaccine which consists of highly purified and inactivated HBsAg particles isolated from a plasma

of persistently infected subjects or from alternative sources as recombinant DNA (Yowf *et al.*, 1982; Valenzuala *et al.*, 1982).

The safety and the efficacy of this vaccine in various western population groups at risk of acquiring HBV infection has been established (Szmuness *et al.*, 1980; Hilleman *et al.*, 1983).

The aim of this study is to :

- (1) Study the safety and the efficacy of HB vaccine in school children (6-12 y.) with and without bilharziasis.
- (2) Study the different variables in school children that may affect the immune response to the vaccine.
- (3) Set recommendations for HB vaccine according to the results obtained.

The vaccines used in this clinical trial are : HEVAC B Pasteur as a model of plasma derived vaccine and HB. VAX. DNA as a synthetic vaccine.