

PREVALENCE OF HEPATITIS-B ANTIGEN IN VARIOUS POPULATION GROUPS OF N.W.F.P.

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Abstract

Sera from 54 hepatitis patients and 52 individuals belonging to the high risk group, consisting of clinicians, nurses and laboratory staff were tested for hepatitis-B antigen (HB Ag) by the hemagglutination technique. In patients HB Ag was detected in 39% and among the high risk group 23% had HB Ag in their sera. The high frequency of HB Ag positive results indicate that hepatitis-B is common in this region and the rate of exposure to the infective agent is very high (JPMA 30:145, 1980).

Introduction

Liver disease is widely prevalent in Pakistan and of all the Liver disorders, viral hepatitis is most commonly encountered (Zuberi et al., 1979) with clinical presentation varying from anicteric hepatitis (Ahmad et al., 1978) to the icteric and fulminant form (Haider et al., 1975). Since the connection between hepatitis-B antigen (HB Ag) and acute viral hepatitis is well established (Prince, 1968; Elling et al., 1970) a number of studies have been carried out on the frequency of hepatitis-B antigen in different parts of the country, i.e. Karachi (Zuberi et al., 1979), Lahore (Haider et al., 1975), Rawalpindi (Akhtar and Akhtar, 1979). This report describes the frequency of hepatitis-B antigen in the North West Frontier Province.

Material and Methods

Sera from 54 clinically diagnosed hepatitis patients and 52 apparently healthy individuals belonging to the high risk group, consisting of 3 clinicians, 9 nurses and 30 laboratory workers were tested for presence of HB Ag using the hemagglutination (Wellcome Research Laboratories, Beckenham, England).

Results

The frequency of hepatitis-B antigen (HB Ag) is shown in table I.

Table I: Frequency of HB Ag in Various Populations

<i>Populations</i>	<i>No. Tested</i>	<i>HB Ag positive</i>	
		<i>No</i>	<i>%</i>
Hepatitis Patients	54	21	39
High risk group	52	12	23

Twenty one (39%) of the 54 hepatitis patients and 12(23%) individuals of the high risk group were HB Ag positive. Of 30 laboratory workers who had been directly involved in handling the sera, 10(33%) were carriers of the antigen. In the nursing staff who had no direct contact with the sera, 2(20%) showed HB Ag. In the clinicians who had no obvious contact with the sera, no HB Ag was detected (Table II).

Table II: Distribution of HB Ag in the High Risk Group

<i>Group</i>	<i>No. Tested</i>	<i>HB Ag Positive</i>	
		<i>No.</i>	<i>%</i>
Lab. Staff	30	10	33
Clinicians	13	—	—
Nurses	9	2	22

Most of the HB Ag positive cases were in 21-30 year age group.

Discussion

The parenteral, and non-parenteral transmission of HB Ag has long been known. The socioeconomic status of people in Pakistan is very poor and since the exposure rate to the infective agent is high in lower socio-economic group (Cherubin et al., 1972), the high frequency of hepatitis-B antigenemia in hepatitis patients (38%) could have resulted from repeated exposure to HB Ag due to poor sanitation,

overcrowding and inadequate medical facilities. The failure to detect HB Ag in patients suggests that these individuals may be suffering from other acute or chronic liver disease (hepstitis-A, cirrhosis, carcinoma) accompanied by jaundice or may be due to the fact that the technique used in the present study is not very sensitive (Cayzer et al., 1974).

The detection of HB Ag positive responses in high risk group (23%) is an important finding. It is interesting to note that 2 of the HB Ag positive subjects actually developed Jaundice 3-4 days after the analysis of their sera. The occupational hazard of hepatitis among medical, nursing and laboratory staff is well established (Koff and Isselbacher, 1968) and the risk seems to be specially great among laboratory workers handling human serum and plasma specimens (Koff and Isselbacher, 1968). Since patients with viral hepatitis and chronic liver diseases, are potential sources of infection (Hacker and Aach, 1973; Szmunn et al., 1974; Froesner et al., 1975), and since personnel do not take appropriate precautions at the time of handling such patients, the detection of HB Ag positive responses in this group suggest that the risk of inapparent non-parenteral transmission of the infective agent is also high. The high frequency of HB Ag positive results obtained in the present investigations indicate that hepatitis-B is very much common in this region and necessitates its further perusal in order to arrive at more clear cut conclusions. Similar observations have been reported by Zuberi et al (1979), Ahmad et al (1978) and Quraishi et al (1978) from other regions of the country.

Hemagglutination is not a very sensitive technique (Cayzer et al., 1974). It is therefore suggested that more sensitive techniques such as Radio-immunoassay (R.I.A.) and or passive hemagglutination (P.H.A.) be employed in undertaking such studies.

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