LETTERS TO THE EDITOR

The prevalence of hepatitis B virus infection in a village

To the Editor; Hepatitis B virus (HBV) infection can be found all over the world and is associated with a broad spectrum of diseases such as chronic carrier state, chronic active hepatitis, liver cirrhosis and hepatocellular carcinoma. Hepatitis B is spread mainly by parenteral routes. There are 200 million carriers of the virus in the world. Most attention has been paid to countries either belonging to the third world or to industrialised countries. Turkey, however can not be assigned to either of these groups. With respect to HBV infection in Turkey, there are many reports which showed that the percentage of hepatitis surface antigen positivity ranged from 3.85% to 8.6% (1-2), but only one study exists in a particular region (3). Therefore, we started an investigation to evaluate the epidemiology of hepatitis B in a rural region in Ankara.

All residents (861) of a small village, which is located about 70 km west of Ankara, were invited to give blood sample. From 784 of 861 residents (91%), serum samples were collected and stored in deepfreeze at minus 20°C. Non-participation was due to absence from the village, having a serious disease or problem with taking blood samples (mainly from newborn). All sera were tested at first for antibodies against hepatitis B core antigen, marking hepatitis B infection in the remote past (Ig G anti-HBc, Corzyme Enzyme Immuno Assay EIA Abbott ChicagoIII. USA) and for hepatitis B surface antigen (HBsAg, Auszyme monoclonal EIA, Abbott). Anti-HBc positive samples with sufficient residual volume were subsequently tested for antibody to hepatitis surface antigen (anti-HBs, Ausab EIA, Abbott).

The prevalence of anti-HBc in the tested population was 43% (in 337 of the 784 persons), the distribution by age is shown in Figure 1. An increase is observed in the age group 55-64 (67% positive) compared to the group age 10-14 (18% positive). Above the age of 19 no significant rise in prevalence of anti-HBc is shown on Table 1. Of all anti-HBc positive individuals, 25% (83 of 337) was HBsAg positive. The overall prevalence for HBsAg in this village is 10.6%. Of all anti-HBc positive individuals 61%(199 of 337) also possessed antibodies to HBsAg. The distribution of anti-HBs within the different age groups were similar to the distribution of anti-HBc. In this population 55 individuals were positive for only anti-HBc (HBsAg and anti-HBs negative).

No significant difference were observed for the serological markers between the different sexes. We evaluated anti-HBc and HBsAg prevalence rates within 101 households with at least four members. In 30 households, with anti-HBc prevalence 0-30%, the average HBsAg prevalence was 6.3%. In 43 households, with anti-HBc 30-60%, we found an average HBsAg prevalence of 9.7% and in 28 house holds, with anti-HBc 60-100%, the average HBsAg prevalence was 20.4%.

It has been shown repeatly that the HBsAg prevalence rates may differ considerably within a country, depending on various local ethnic, socioeconomic, cultural, geographic, relegious and other factors. We found an HBV endemic region in a rural area. It should be emphasized that the data presented may reflect only the local situation. However, this finding is consistent with the results of a previous study by the World Health Organisation (3). Although the precise mode of transmission remains unknown, the observed peak of infection rate in the 55-64 years age group suggests that HBsAg positivity

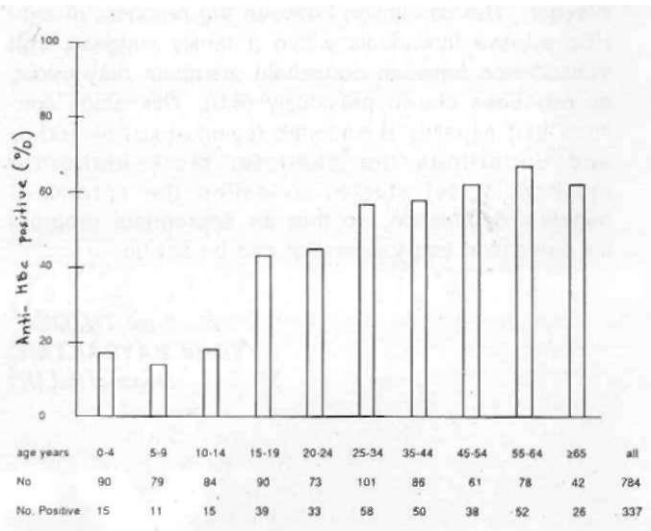

Figure 1. Distribution of anti-HBc positive individuals in the population by age

Tablo 1. Distribution of HBsAg and anti-HBs among anti-HBc positive individuals (ranged by age)

Age (years)	n	HBsAg(+) n		anti-HBs(+) n	%
0-4	15	1	9%	0	0-% ,
5-9	11	0	0%	1	10%
10-14	15	3	20%	5	33%
15-19	39	12	31%	25	64%
20-24	33	5	15%	25	76%
25-34	58	16 - ;•:-.,.,»->:'	28%	39	67%
35-44	50	11	22%	33	66%
45-54	38	14	37%	23	61%
55-64	52	15	29%	32	63%
>65	26	6	23%	16	64%
Total	337	83	25%	199	61%

shows a parallelism with the age. In the group 0-9 year we .found low prevalence of anti-HBc and HBsAg, this shows that neonatal and childhood infection is relatively uncommon in these population. These results follow the geographic patterns of previously reported distribution of FİBV in Mediterranean and The Middle East (4).

In this study, a group was identified with only antibodies to the hepatitis* j3 core antigen. The value of anti-HBc as a sole marker of hepatitis B infection has often generated questions in interpretation in other comparative studies (5,6) and it remains to be determined whether these individuals have been truely infected. In some studies, although it was pointed out that higher titres of Ig G anti-HBc without anti-HBs indicate persistence of viral infection (7), we were not able to evaluate these 55 patients in order to demonstrate whether they have persistence of viral B infection. The correlation between the numbers of anti-HBc positive individuals within a family suggests that transmission between household members may occur, as has been shown previously (8,9). This study confirms that hepatitis B endemic regions exist in Turkey and underlines the need for more elaborate epidemiological studies to define the spread of hepatitis B infection, so that an appropriate program for prevention and vaccination can be set up.

Suat TUZGÖL[1]
Yusuf BAYRAKTAR[2]
Nazmi BİLİR[3]
Çağatay GÜLER[3]
Hasan TEL ATAR[2]

department of Virology, Academic Medical Center, AMSTERDAM, THE NETHERLANDS
Depst. of Gastroenterology and ^Social Medicine, Medical School of Hacettepe University

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