Original Article

FREQUENCY OF HEPATITIS-B CARRIERS AMONG CHILDREN IN DERA GHAZI KHAN URBAN SLUMS

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ABSTRACT:

OBJECTIVE: To find out the seroprevalence of Hepatitis "B" carriers among children in Dera Ghazi Khan urban slums.

DESIGN: An observational descriptive cross-sectional study.

SETTING: Dera Ghazi Khan urban slums and Paediatric Medicine Unit in Teaching Hospital Dera Ghazi Khan.

SUBJECTS: Five hundred fifty children admitted to Paediatric Unit in Teaching Hospital Dera Ghazi Khan and those in urban slums of Dera Ghazi Khan City.

MAIN OUTCOME MEASURES: Seroprevalence of Hepatitis "B" carriers.

RESULTS: Mean age of children in our study was 7.5 years. Males were 54%. The number of children detected as carriers of Hepatitis B was 16 (2.9%). Out of 16 carriers, 7 had successfully completed their EPI schedule, 4 received incomplete vaccination while 5 carriers did not receive any EPI schedule vaccination. Just one seropositive case gave past history of jaundice in his early neonatal period for which he got exchange transfusion. None of the carriers got tattooing nor shared piercing of nose or ears by a common (contaminated) needle. There were no signs suggestive of chronic liver disease in any carrier.

CONCLUSION: Overall seroprevalence of Hepatitis-B carriers in Bahawalpur is 2.9%. There is a large cohort of seronegative children. They need to be protected against HBV infection through active immunization.

KEY WORDS: Urban slums, seroprevalence, Hepatitis-B carriers, frequency.

INTRODUCTION:

Hepatitis-B is a big global public health problem, especially in the developing countries. One of the leading complications of the infection is the development of "Carrier State" "Carrier" is a person who harbours the infectious agent (HBV here) in his body without himself suffering from signs and symptoms of the disease and is capable of transmitting the agent to others and there community[1].

The major sources of H.B. infection are the infected blood or blood products; saliva; urine; semen and vaginal secretion, carriers in addition to being a risk of Hepatitis-B infection to other, are themselves at a higher risk to develop chronic liver disease and hepatoma[2].

One of the important serological markers for the detection of HB carriers is the HBs Ag. the HBs Ag carrier rate is 0.1 % in UK; 8.8% in Eastern

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Saudi Arabia and 20% in South East Asia[3]. In Pakistan, 3-4% of healthy subjects are HBs Ag Positive. In blood donors at Islamabad Pakistan, the prevalence rat is reported to be 8%[4].

Carrier state is more common in immunocompromised; those receiving transfusions (like thalassemia patients); drug addicts and patients with the Down Syndrome[5]. The only cost-effective remedy for children with Hepatitis-B is prevention (since interferon is recommended for persons.18 years)[6].

Aim of the present study was to find out the prevalence of HBs Ag carriers among child population in Dera Ghazi Khan Urban slums and those attending the Paediatric Medicine Unit in Teaching Hospital Dera Ghazi Khan during the period from Mid Sep. 2014 to Mid Jan. 2015.

SUBJECT AND METHODS:

STUDY DESIGN:

This was an observational cross-sectional study carried out in Urban Slums of Dera Ghazi Khan and in Paediatric Medicine unit Teaching Hospital Dera Ghazi Khan.

STUDY POPULATION:

Keeping in view the time limit and feasibility, a sample of 550 children having ages 6 months to 15 years was taken.

SAMPLING TECHNIQUE:

Non probability quota sampling technique: A quota of 110 children each from the Paediatric Medicine Unit in Teaching Hospital Dera Ghazi Khan and Urban slums in the East; West; North and South of Dera Ghazi Khan city was taken by a team of doctors working in Community Medicine Department in Ghazi Khan Medical College, Dera Ghazi Khan and Paediatric Medicine Ward in Teaching Hospital Dera Ghazi Khan.

MATERIAL:

In addition to collection of blood samples of children, the background information was also collected with the help of a preformed questionnaire. The samples were stored and transported maintaining the cold chain till these were delivered to the Microbiology Department in Ghazi Khan Medical College, Dera Ghazi Khan for testing in batches by the latest (immunochromatography technique). Positive samples were further subjected to ELIZA test for confirmation.

RESULTS:

Sample size of the study population was 550 (n=550) children ranging between 6 months to 15 years of age. All belonged to the low to middle socio-economic groups of Urban slums. 297 (54%) were male and 253 (46%) were female children. Majority (42%) were between 6 months to 5 years of age (table-I).

The number of children detected as carriers of HB was 16 (9 males and 7 females children).

With an overall prevalence rate of 2.9% (16 out of 550) HB carriers in different age groups is given in table-II. 7 children (1.3%) were between 0.6-5 years; 5 (0.9%) were between 6-10 years and 4 (0.7%) were between 11-15 years.

Out of the sixteen positive confirmed carriers of HB infection, none had ever received vaccination against HB infection. However, 7 seropositive cases had successfully completed their EPI schedule, 4 had received no EPI schedule vaccination.

Merely, in one case, past history of jaundice in his early neonatal period was positive, and he had received exchange transfusion. None of the carriers got tattooing, nor shared piercing of nose or ears by a common (contaminated) needle. There were no signs suggestive of chronic liver disease in any carrier.

TABLE –I

Age & Sex distribution of the children

Age (in years)	Sex		Total	Percentage
	Male	Females		
0.6-5	127	104	231	42.00%
06-10	101	095	196	36.00%
11-15	069	054	123	22.00%
Total	**297**	**253**	**550**	**100%**

* Results are significant at p-value = 0.05

TABLE II

Prevalence of frequency Hepatitis-B carriers

Age (in years)	No. of cases		Total	Percentage
	Male	Female		
0.6-5	4	3	7	1.3%
06-10	3	2	5	0.9%
11-15	2	2	4	0.7%
Total	**9**	**7**	**16**	**2.9%**

* Results are significant at p-value = 0.05

DISCUSSION:

Frequency of Hepatitis – B Carriers in our study was 2.9% (16/550). This was quite comparable with earlier studies carried out in Pakistan[7]. In a hospital based study carried out oat Lahore the carriers rat of Hepatitis-B infection was 2.93%[7]. Another survey conducted at national level in Pakistan the prevalence rate was found out to be 2.97%[8]. A study conducted recently at Children Hospital and the Institute of Child Health Lahore, the prevalence of HB carrier was estimated to 2.04%[6]. However, the prevalence of HB carriers in adult population in a survey conducted at Bahawalpur was quite high i.e. 3.76%[2]. In our study, the carrier rate in both the sexes of children was almost similar and comparable to other studies conducted in Pakistan[6,10]. Established routes of HBV transmission include, perinatal mixing of the contaminated blood of the mother with that of the baby; tattooing with contaminated needles, transfusion of infected blood to healthy recipients; medication through parenteral routes with contaminated needle; through sexual contact; use of contaminated needles for piercing of the ears and noses of persons[9]. Perhaps carriers in our study most likely contracted infection perinatally. Majority of our patients (11/16) had received either complete or partial vaccination against Hepatitis-B. This factor might have played a role in the transmission of Hepatitis-B virus.

In this study 534 children were seronegative and were therefore at higher risk for contracting Hepatitis-B infection. This huge cohort of seronegative children could be protected from getting Hepatitis-B infection by active immunization against the disease. It is therefore recommended that Hepatitis-B vaccination coverage may be further enhanced and intensified. Moreover, more research into this problem is need of the hour. Further, intensification of creation of awareness campaign about this fatal disease at mass level through print and electronic media including awareness walks and seminars are urgently needed.

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CONTENTMENT IS THE CAPITAL WHICH WILL NEVER DIMINISH.

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