Vol. 16, No. 2
ORIGINAL PAPER

COMMUNITY & MEDICINE

MEDICAL CHANNEL
APRIL - JUNE 2010

HEPATITIS B & C: SHARE OF YOUNG RURAL POPULACE OF SINDH

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ABSTRACT

OBJECTIVE: *The aim of this study was to determine frequency of hepatitis B and C and identify associated risk factors among young people of rural Sindh seeking recruitment in Pakistan Army.*
PLACE AND DURATION OF STUDY: *The study Conducted at combined Military Hospital Hyderabad over a period of five months (April 2006 to September 2006)*
STUDY DESIGN: *Prospective cross sectional Laboratory based study.*
PATIENTS AND METHODS: *A total of 2600 young people, mostly male from various areas of rural Sindh were studied. 'HBs Ag' and Anti 'HCV' were tested by immunochromatographic essay and positive test were confirmed by ELISA method.*
RESULTS: *2320(89.23 %) were male and 280 (10.77 %) were female with age range of 17-26 years. 402 subjects were found positive in all three categories of hepatitis B, hepatitis C and both hepatitis B and C. ELISA test was detected positive in 340 (13.11 %) (303 male and 37 female) study subjects, 187 (7.23 %) were found positive for HB_S Ag, 128 (4.92 %) were found positive for anti-HCV, 25(0.96 %) were found positive for both HBS Ag and anti-HCV. Specified related risk factors among young people of rural Sindh were found positively associated.*
CONCLUSION: *The frequency of the disease showed a rising pattern and require attention of all concerned .A massive health education campaign in rural areas of Sindh regarding HBV and HCV infection along with Hepatitis B vaccination at all health care outlets should be organized along with other EPI diseases.*

KEYWORDS: Hepatitis 'B', Hepatitis 'C', HB_S Ag and anti-HCV , Young Population, Rural Sindh.

INTRODUCTION

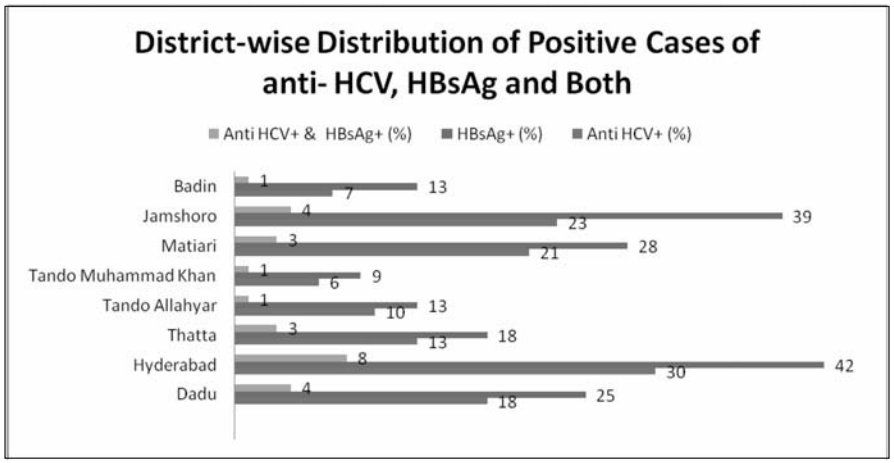
Viral hepatitis is one of the major public health problems at the global level. Hepatitis B and C can cause both acute and chronic disease. WHO estimates that two billion people have been infected with hepatitis B virus (HBV) and more than 350 million have chronic (long term) liver infection. An estimated 600,000 persons die each year due to the acute or chronic consequences of hepatitis B [1]. For Hepatitis C the estimates are 180 million people,130 million of whom are chronic HCV carriers at risk of developing liver cirrhosis and / or liver cancer [2] .

In Pakistan Hepatitis B and C have reached at an alarming stage. Different country wide studies (individual researchers) and population based Hep: B and C survey estimated a prevalence rate of 3-4 % of Hepatitis B and 5-6 % Hepatitis C; which translates a burden of around 12 million affected individuals [3] .Based on this figure the country is categorized in the intermediate HBV prevalence area with a carrier rate of 3-4 % [4] and for hepatitis C antibody it is 3% [5] . Recent data shows nearly 60-70 % patients with chronic liver disease in Pakistan tend to be positive for anti-HCV [6,7,8]. It has been demonstrated that nearly 50 % patients with hepatocellular carcinoma ((HCC) in Pakistan are anti- HCV [9]. Province wise data shows high (4.3 %) figures of Hepatitis B in Baluchistan; while Hepatitis C is high in Punjab (6.0%) and Sindh (5.0 %).NWFP has 1 % each of Hepatitis B and C [3]. A recently concluded survey [10] found HCV prevalence within provinces as 5% in Sindh, 6.7% in Punjab, 1.1% in NWFP and 1.5% in Baluchistan. For HBV the figures were 2.5% in Sindh, 2.4% in Punjab, 1.3% in NWFP and 4.3% in Baluchistan. In Sindh the HBV figures were high in Khairpur (6.3%), Ghotki (5.9%), Larkana (4.3%), and Noshero Feroze (4%). For HCV very high figures were seen in Ghotki (12.7%),

Sanghar (7.8%), Dadu (7.2%), Hyderabad (5.7%), Thatta (5.4%), Shikarpur and Jacobabad 5.3% each.

The aim of this study was to determine frequency of hepatitis B and C and identify associated risk factors among young people of rural Sindh seeking recruitment in Pakistan Army.

FIGURE 1 :
DISTRICT-WISE DISTRIBUTION OF POSITIVE CASES OF ANTI HCV, **HB_s AG & BOTH**.



SUBJECT AND METHODS

The study was focused to the young people of rural Sindh desirous of induction in Pakistan Army. Duration of the study was five months starting from 01April to 01 September 2006 and venue was Combined Military Hospital Hyderabad .This study was designed to collect information regarding the status of Hepatitis B virus (HBV) and Hepatitis C virus in civil candidates reported from different areas of Sindh to Combined Military Hospital Hyderabad for induction in Pakistan Army. A prospective cross sectional study was conducted in April to September 2006. All personnel without any discrimination of age , gender, and socio economical status were included. Personnel belonging to urban areas and those having history of hepatitis B vaccination, diabetes, hypertension or any other systemic disease were excluded. Informed consent was obtained from the study subjects. A questionnaire was designed to get information on different variables. Trained laboratory staff collected the blood samples. A total of 2600 personnel were screened for HB_s Ag and anti-HCV (in addition to other tests required for induction in Pakistan Army) using the IDI-IND diagnostic inc (Canada). HB_S Ag device and by Maxi-test anti-HCV rapid test (IND diagnostic inc- Canada) based on immunochromatographic principles. Positive test samples were sent to PNS Shifa (tertiary care hospital) for confirmation by third generation enzyme linked

TABLE 1:
DESCRIPTION OF VARIABLES.

Variables	All Cases (n=340)		Hepatitis C Cases (n=128)		Hepatitis B Cases (n=187) (n=25)		Hepatitis B & C Cases	
	No	%	No	%	No	%	No	%
Sex								
Male	303	89.11	115	89.84	168	89.84	20	80.00
Female	37	10.89	13	10.16	19	10.16	5	20.00
Education								
High School	259	76.17	98	76.56	145	77.54	16	64.00
College or Beyond	81	23.83	30	23.44	42	22.46	9	36.00
Marital Status								
Single	144	42.35	58	45.31	75	40.11	11	44.00
Married	196	57.65	70	54.69	112	59.89	14	56.00
Employment								
No	187	55.00	71	55.47	102	54.54	14	56.00
Yes	153	45.00	57	44.53	85	45.46	11	44.00
Risk Factors								
Unknown	148	43.53	58	45.00	82	43.76	8	32.00
Injection	29	8.53	9	6.67	18	09.38	2	8.00
Sexual Contact	11	3.24	6	5.00	4	2.06	1	4.00
Transfusion	97	28.53	36	28.33	54	29.17	7	28.00
Congenital	2	0.58	0	0.0	0	0	2	8.00
Dentistry	53	15.59	19	15.00	29	15.63	5	20.00

immunosorbant assay (ELISA) test. Data was analyzed using SPSS Software version 10.

RESULTS

The age range of study participants was 17-26 years. 2320(89.23 %) were male and 280
(10.77 %)were female. 402 subjects were found positive in all three categories of hepatitis B, hepatitis C and both hepatitis B and C. ELISA test was detected positive in only 340 (303 male and 37 female) subjects.Overall infection rate was 13.11 % , 187 (7.23 %) were found positive for HB_S Ag with male to female ratio of 90:10 and mean age 21 ± 7 , 128 (4.92 %) were found positive for anti-HCV with male to female ratio of 90:10 and mean age 21 ± 6, 25(0.96 %) were found positive for both HB_S Ag and anti-HCV with male to female ratio of 80:20 and mean age 22 ± 1.

Demographic factors findings

Districts of study population: - District wise distribution is shown in Figure-1. Rural areas of District Hyderabad and Jamshoro were on the top of the list in frequency while the lowest frequency was observed in District Tando Muhammad Khan in all three categories.

Educational Level: - Educational factor was very much correlated with the causation of disease in all three categories on univariable analysis however it was not so on multivariable analysis P > 0.05.

Marital status: - 144 diseased study participants were bachelor as compared to 199 married personnel.

Employment History: - 187 diseased study participants were having job as compared to 199 personnel.

Modes of acquisition of Virus

Unknown History: - Majority (43.5 %) of study participants were ignorant about any link of causation of the disease. All three groups showed a higher percentage of causation with unknown history.

Injections history:-This includes history of taking injections as kind of habit.29 (%) study participants were found in this group.

Therapeutic Injections: - This group includes personnel who ever had a history of pricking by a needle for therapeutic purposes.310 (91.17 %) gave positive response. Majority of them failed to recall the use of new/disposable syringe therefore this factor was discarded.

Immunization History: - All study participants gave a negative history of having Hepatitis B vaccination.

Blood Transfusion: - 97 diseased personnel gave affirmative answer of having blood during their sickness.

Dental Treatment: - 53 diseased study participants received a dental treatment.

Sexual Contact: - 11 diseased study participants had history of extramarital sexual contact.

Congenital: - 02 diseased personnel were having congenital history of acquiring this disease.

DISCUSSION

Rural population remain susceptible to all sort of diseases because of numerous factors.One of the prime factor is poverty.The causes of poverty include lack of education, poor access to health services, large family size, gender discrimination and vulnerability to environmental degradation and deterioration of the natural resource base. Rural people seek job opportunities in cities and this leads to rapid urbanization. This study was focused to such rural population who applied for the job in Pakistan Armed Forces. Viral Hepatitis rapidly spreads owing to lack of awareness and rural population therefore remains at high risk of acquiring the infection of Hepatitis B and C.

In this study the age range of study participants was 17-26 years.The age range for different categories of commission/ recruitment in army is 17-30 years [11]. The reults of our study was not different from other studies carried out in Pakistan army hospitals .A study [12] on same topic was carried out in Combined Military Hospital Malir which revealed seropositivity of 4.5 % for HBsAg and 3.2%. for anti HCV. In rural Sindh its findings were 6.4 % for HBsAg and 3.5 %. for anti HCV. In another study [13] which carried out at Combined Military Hospital Pano Aqil the percentage was 7.39% for HBsAg and 4.37 % of anti-HCV. A recent survey (First survey in Pakistan) on the prevalence of hepatitis B and C conducted from July 2007 to May 2008 in collaboration with Ministry of Health, Statistics Division, Federal Bureau of Statistics (FBS) and Pakistan Medical Research Council (PMRC) found a prevalence of 4 - 6.3% for hepatitis B (HBsAg) and 5.3% - 12.7 % for hepatitis C (HCV) in Sindh. The findings of risk factors of our study

CONCLUSION

Results of this study are on the same pattern as observed in other studies. Attempts should be made to reduce the incidence of HCV and HBV and their unregulated spread. To control the disease in Pakistan, one has to increase the hepatitis B vaccination in newborns and high risk groups. For HCV the use of therapeutic injections has to be curtailed to a minimum of 3-4 injections per person per year with stronger injection safety measures. There is a need to increase public awareness of simple preventive measures and to have similar studies at a national level to find out the disease burden.

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