



HEPATITIS B AND C; PREVALENCE IN SOUTH PUNJAB POPULATION

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ABSTRACT... Background: Pakistan is a developing country of 180 million people with low health and educational standards. According to the Human Development Index of the United Nations, it is ranked 146th out of 187 countries. **Objective:** To know the actual disease burden of Chronic Hepatitis Viruses B and C in Southern Punjab. **Study Design:** Cross-sectional, Observational study. **Setting:** Ibn-e-Sina Hospital and Research Centre. **Period:** March 2010 to February 2014. **Methodology:** A total of 26800 people from general population were included in the present study. Free vaccination camps were established in rural and urban union councils with the help of local politicians, in Schools, Madrassahs and Industrial units and a permanent camp was established in Ibn-e-Sina Hospital. People of all age groups and either sex were vaccinated. **Results:** A total of 26800 individuals were screened, (mean: 36.47 ± 13.81). 2090 (7.8%) tested positive for Anti-HCV. Among these 68.6 % (n=1433) were males while 31.4% (n=657) were females. 616 (2.3%) tested positive for HBsAg of which 401 (65.2%) were male and 215 (34.8%) were female. 75 subjects (0.28%) were positive for both HBsAg and Anti-HCV. **Conclusion:-** We as a community need to be more vigilant as the disease burden of HBsAg is not decreasing in the general population and the Burden of Anti-HCV is one of the highest in the world.

Key words: Chronic Hepatitis Viruses, vaccination, Madrassahs.

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INTRODUCTION

Pakistan is a developing country of 180 million people with low health and educational standards. According to the Human Development Index of the United Nations, it is ranked 146th out of 187 countries.¹ Pakistan carries one of the world's highest burden of chronic hepatitis viruses (both Hepatitis B virus---HBV and Hepatitis C Virus---HCV) and mortality due to liver cirrhosis and hepato-cellular carcinoma.²

In Pakistan, studies carried out on different segments of population have shown variable degree of prevalence in different risk groups. According to an estimate, there are about 9 million hepatitis B and over 14 million hepatitis C carriers all over the country. The prevalence of Hepatitis B Surface Antigen (HBs Ag) and antibodies to hepatitis C virus (anti- HCV) in young healthy Pakistani adults in recent studies carried out in different cross sections of population has ranged from

2.56 - 3.53% and 2.3 - 5.3% respectively^{3,4,5} with segments of much higher prevalence as noted by Umer et al.⁶ However, most of these studies are based on healthy young individuals, usually as a part of pre-employment screening or blood donation which may not be a true cross-section of the whole community. This was highlighted in a review by Bosan et al⁷ where the lack of adequate community-based epidemiological work in Pakistan was noted.

To eradicate and control Hepatitis B and C virus from population as desired by WHO, it is important to know the actual burden of illness as possible and to determine where we actually stand as far as the prevention of the disease is concerned after 24 years of HCV discovery and the availability of effective HBV vaccination. This is important as some developing countries have achieved much on the prevention front of Hepatitis B⁸ and it is possible to eliminate HCV by 2030 if we in-

crease the diagnosis and treatment 5 fold.⁹ So we planned a community-based cross-sectional study at Ibn-e- Siena Hospital and Research Centre to examine the prevalence of HBsAg and Anti-HCV in Southern Punjab population.

Study design

It was designed to be Cross-sectional, Observational study.

Place and Duration of Study

The study was carried out in Ibn-e-Sina Hospital and Research Centre from March 2010 to February 2014.

METHODOLOGY

A total of 26800 people from general population were included in the present study. Free vaccination camps were established in rural and urban union councils with the help of local politicians, in Schools, Madrassahs and Industrial units and a permanent camp was established in Ibn-e-Sina Hospital. People of all age groups and either sex were vaccinated. Brief clinical history was recorded. For screening of HBsAg the architect HBsAg assay which is a chemi-luminescent micro practice immuno assays (CMIA) for quantitative determination of hepatitis B surface antigen (HBsAg) was used. This was provided by Abbott diagnostics. For HCV, ACON laboratories kit was used. The HCV one step test device (Serum/Plasma) is a rapid chromatographic immunoassay for the qualitative detection of antibody to Hepatitis C virus in serum or plasma. The directions of the manufacturers were strictly followed.

RESULTS

A total of 26800 individuals were screened, (mean: 36.47 ± 13.81). 2090 (7.8%) tested positive for Anti-HCV. Among these 68.6% (n=1433) were males while 31.4% (n=657) were females. 616 (2.3%) tested positive for HBsAg of which 401 (65.2%) were male and 215 (34.8%) were female. 75 subjects (0.28%) were positive for both HBsAg and Anti-HCV.

The age range of the patients with seropositivity is shown in (Table-I&II)

Age range in Years	Numbers	Percentage
0-15	26	1.82%
16-30	265	18.54 %
31-45	495	34.54%
46-60	503	35.10%
> 60	144	10.04%

Table-I. Age of the individuals with Anti-HCV Seropositivity (n=1433)

Age range in Years	Numbers	Percentage
0-15	36	5.84%
16-30	145	23.53%
31-45	202	32.79%
46-60	165	26.78%
> 60	68	11.04%

Table-II. Age of the individuals with HBsAg Positivity (n=616)

DISCUSSION

Ours study results confirm that the menace of hepatitis continues to haunt our population. In our study, prevalence of Anti-HCV was higher than HBsAg as found in other local studies.

A study by Mirza et al²³ of 1821 healthy recruits from Southern Punjab in 2005-2006 showed 5.9% HBsAg and 2.5% Anti-HCV seropositivity. However this study only young recruits with predominance of seropositivity from Muzaffargarh. We think this study did not reflect the load of disease in general population of Southern Punjab.

As far as prevalence of HbsAg and Anti-HCV in general population is concerned, our study found the prevalence of HBsAg (2.3%) similar to that observed by another large study conducted by Khokhar et al⁵ and the National Survey conducted by PMRC ---2.5%.⁴ This reflects that we have not moved much in the prevention of HBV transmission. This is worrisome as HBV is totally preventable and certain Far Eastern Countries have achieved much in this regard.⁸

The Prevalence of Anti-HCV (7.8%) observed in our study was higher than observed in the National Survey ---5%⁴ and other studies/meta-analysis with large population.^{3,5,6,10,22} But this difference

can be explained by the fact that first, our area of study included the districts which have been reported to have the highest prevalence of Anti-HCV in the country⁵. However, PMRC survey of the Multan District which included 1019 persons showed 7.4% prevalence which is close to that estimated by our study. Second---ours was a

large community-based study as compared to other studies which are hospital-/ laboratory-based and checked the population at their doorstep and included the population across all the spectrum of age and sex so that we think it truly reflects the load of disease at least in the Southern Punjab.

Author/Publication Year	Study Group	Number Studied	HBsAg %	Anti-HCV %
Khattak MF et al ¹⁰	Blood donors	108858	3.3%	4.0%
Zakaria Manzar et al 2003 ¹²	Healthy Naval recruits	963	3.2%	2.2%
Khokhar N et al 2004 ⁵	Pre-employment screening for Gulf-----Islamabad	47538	2.56%	5.3%
Farooq et al.2005 ¹¹	Healthysoldiers	665	3.0%	3.3%
Irfan et al. 2006 ¹³	Healthy adults seeking recruitment	15550	3.24%	3.69%
Nazar H et al 2008 ¹⁴	Blood donors-----Karachi	11459	1.7%	2.06%
Gull-e-Atif et al 2009 ¹⁵	General Population Rawalpindi	3800	2.7%	10.4%
Ahmed Aziz et al 2009 ¹⁶	General Population swat	3800	3.5%	13.8%
Hussain Shagufta et al 2010 ¹⁷	Health-care workers in Tertiary Care Hospital---Islamabad	359	0.5%	1.6%
Makhejakirpal Das et al 2010 ¹⁸	Road-side barber visitors-----Karachi	184	Not studied	38%
Iqbal MZ et al 2011 ¹⁹	Orthopedic patients in tertiary care hospital--- RYKhan	745	4.8%	16.7%
Nafees Muhammad et al 2011 ²⁰	Jail population-----Lahore	3062	3.5%	15.3%
Yahya et al 2011 ²¹	Diabetic patients---Faisal Abad	184	-----	18.8%

Table-III. Comparison of HBsAg and Anti-HCV prevalence in Various Local studies.

Note: Almost all the studies are laboratory-/hospital- based.

CONCLUSION

We as a community need to be more vigilant as the disease burden of HBsAg is not decreasing in the general population and the Burden of Anti-HCV is one of the highest in the world. We need to increase the prevention, diagnosis and treatment efforts by at least 05 fold to get rid of the disease in next 30 years as was noted by Hatazakis et al²⁴ for Mediterranean countries.

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
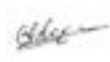
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PREVIOUS RELATED STUDY

Shabnam Naseer Awan, Shazia Nayyar, Nadeem Ashraf. **OBSTETRICS AND PERINATAL OUTCOME; RISK FACTORS FOR HEPATITIS B AND C TRANSMISSION (Original)** Prof Med Jour 13(4) 511-516 Oct, Nov, Dec, 2006.

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AUTHORSHIP AND CONTRIBUTION DECLARATION

Sr. #	Author-s Full Name	Contribution to the paper	Author=s Signature
1	Dr. M. Naveed Aslam	Plomed the study, Supervised, Collected data and melysed it	
2	Dr. Muhammad Nadeem	Supervised community comps, collected data, searched previsions wo-te done	
3	Dr. Umar Farooq Qureshi	Supervised community comp, responsible for layout of the paper material and its proggressing	