

## FREQUENCY OF HEPATITIS B & C VIRAL INFECTIONS AMONGST STUDENTS OF A MEDICAL SCHOOL OF ISLAMABAD, PAKISTAN

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### ABSTRACT

The increased frequency of Hepatitis B and C viral infections is considered to be amongst the very important health issues. Therefore, the current study has been planned to assess the frequency of specific diseases in adult age group medical students. It was a Descriptive study, carried out on 151 medical students of Al-Nafees Medical College and Hospital, Islamabad. A convenient sampling technique was adopted for the proceedings of study. Informed consent followed by a questionnaire filling was the important prerequisites of study. This was to get adequate information regarding the presence of any predisposing factor and subclinical presentation. The data was finally analyzed by SPSS version 16. For qualitative variables frequency of specific infection was calculated in terms of percentages. While for specific age group, quantitative variables i.e. mean and standard deviation were calculated. The results of current study have shown 0.66% (n=1) hepatitis C viral infection (HCV) and 0% (n=0) hepatitis B viral infection (HBV). The study concluded that, the frequency of both HBV and HCV infection was found to be very less than that expected. This study suggests that the National preventative programs and strategies against both HBV and HCV are successful.

**Keywords:** Hepatitis B, Hepatitis C, Frequency, Medical students

### INTRODUCTION

Hepatitis C viral infection (HCV) and hepatitis B viral infection (HBV) has been analyzed as significant causes of high morbidity and mortality rates in our country, Pakistan (Memon *et al.*, 2012).

A review analysis report by Bosan *et al.* had shown 25% and 54% prevalence of HCV and Anti-Hepatitis B surface antigen (anti- HBsAg) amongst the chronic liver disease patients in Pakistan (Bosan *et al.*, 2010; Ali *et al.*, 2009) had shown 2.4% and 2.1% prevalence of HBV and HCV infection in pediatric age groups (Ali *et al.*, 2009). World health organization (WHO) report for the year 2011 had shown 3% prevalence of hepatitis C viral infection (HCV) worldwide. While, the condition ultimately heading towards chronic HCV was observed in 130-170 million people. The prevalence of cirrhosis in such patients is about 10%. It was also highlighted in report, that Pakistan (4.8%), Egypt (22%), and China (3.2%) are having the high prevalence of disease (Ali *et al.*, 2009; WHO, 2011).

Hepatitis B&C are of viral origin that primarily affects the liver. The infection is usually subclinical/ asymptomatic, but chronic infection can lead to scarring of the liver and

ultimately to cirrhosis leading to liver failure, hepato cellular carcinoma or life-threatening esophageal and gastric varices (Ryan *et al.*, 2004)

A study report by Ali *et al.* had shown the deficiency of National data regarding exact prevalence and risk factors for the transmission of HCV and HBV. However, few studies suggests that contaminated needles especially used for any case management or by intra venous drug abusers and unsafe blood or blood products transfusion practices are the major reasons for the spread of HBV or HCV infection in our country (Ali *et al.*, 2009). Therefore, the current study has been planned to assess the frequency of HBV and HCV amongst the medical students.

### METHODOLOGY

A descriptive study was carried out on the medical students of Al Nafees Medical College and Hospital (ANMC&H), Islamabad from January 2012 to February 2013. It was carried out by the collaboration of physiology and pathology departments of ANMC & H. Al Nafees Medical College is situated in the main city of Islamabad and is currently dedicated to accommodate the students from 23 cities of Punjab, 05 cities of Khyber Pakhtunkhwa, 02 cities of Azad Jammu and Kashmir, 01 city of

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Sindh and 01 of Baluchistan. Thus, a total of 32 cities were randomly screened for HBsAg and anti HCV.

The objective of study was to identify the frequency of Hepatitis B and C in relation to predisposing factors and subclinical presentations. A convenient sampling technique was adopted for the study proceedings. All the willing day scholar or hostel resident, male and female medical students of any age group were *included* in the study. While the students who had a history of HBV vaccination of less than five years or those who were the known cases of HBV or HCV infection were *excluded* from the study.

Three ml of venous blood sample was taken aseptically from all the selected students to see the presence of HB surface antigen (HBsAg) and anti HCV antibodies (Anti HCV). A serum was separated at 3000 rpm for five minutes and finally analyzed by immune chromatographic device test for the detection of HBsAg and anti HCV. The history along with the laboratory findings were ultimately recorded on the proforma and analyzed statistically at the end. The results were analyzed by SPSS version 16. For qualitative variables frequencies were calculated in term of percentages, while for quantitative variables, mean and standard deviations were assessed for statistical inference.

## RESULTS

A total of 150 medical students with a distribution of 48% (n=72) males and 52% (n=78) females were included in the study. The mean age of students was  $19 \pm 0.09$ . These students were the representatives of 32 cities of Pakistan. From Punjab 93.3 % (n=141), Khyber Pakhtunkhwa (KPK) 3.97 % (n=06), Azad Jammu & Kashmir (AJ&K) 1.32 % (n=02), Sindh 0.66 % (n=01), and Baluchistan 0.66% (n=01), students were included in the study. This is shown in table.

Out of the total 150 students, HCV infection was present in 0.66% (n=01). While no student was found suffering from HBV infection i.e. 0 % (n=0). This is shown in table.

The history of dental procedures was present in 11.3 % (n=17). While surgical history was obvious in 3 % (n=05). These have no significant association with positive cases i.e. 0.66% (n=01). The constitutional symptoms like myalgias, arthralgias and fatigability was

obvious in about 7.3% (n=11). These have significant association with positive case i.e. 0.6 % (n=01).

## DISCUSSION

The global statistics report by WHO (2000-2002) had shown that HBV & HCV are amongst the main causes of liver cirrhosis and hepatocellular carcinoma worldwide. It was also narrated in the report that 350 million people used to acquire HBV infection annually resulting in 366,000 deaths. While 170 million people acquire HCV infection per annum resulting in 563,000 deaths (Previsani *et al.*, 2002; WHO, 2000; Perz *et al.*, 2006). The current study results have shown 0.66% (n=01) HCV & 0% (n=0) HBV infection amongst the medical students from different cities of Pakistan. This finding is comparable with the findings of Mumtaz *et al.* who described 6.21% prevalence of HCV and 5.86% prevalence of HBV amongst the blood donors, in Pakistan (Mumtaz *et al.*, 2002).

Another extract of current study was that, HCV infection is usually transmitted via unsterile equipment. This is in accordance to the results of a study by Sutton *et al.* Nelson *et al.* and Removille *et al.* (Sutton *et al.*, 2006; Nelson *et al.*, 2007; Removille *et al.*, 2011).

The results of current study have shown the reduced prevalence of HBV and HCV infection in our country. However, there is a dire need to carry out regular surveillance of HBV and HCV infection in order to plan for the preventive to reduce the expanding burden from both infections (Gidding *et al.*, 2009). Moreover, the important predisposing factors like deficiency in provision of health education, illiteracy, poverty, and lack of cost effective and easy availability of hepatitis B vaccination should regularly be surveyed to control the extent of disease in our country (Ashraf *et al.*, 2010). While the participation of health regulating governing bodies to provide cost effective treatment of HCV infection will further be a step ahead to combat disease.

Thus, public awareness and well coordinated action plans by the health care providers regarding use of sterilized equipment and promotion of safe blood transfusion practices can add up in controlling the disease burden in our country (Houghton *et al.*, 2009; Mühlberger *et al.*, 2009).

**Table 1: Distribution and Frequency of HBsAg and HCV Infection amongst the Medical Students (N=150)**

Sr. No	Regions		Males		Females		HCV +		Anti HBS Ag	
			n	%	N	%	n	%	n	%
<b>I.</b>	<b>Punjab</b>		<b>65</b>	<b>43.3</b>	<b>76</b>	<b>50.6</b>	<b>1</b>	<b>0.66</b>	<b>0</b>	<b>0</b>
a.	Cities	Rawalpindi	27	41.5	48	63.1	0	0	0	0
b.		Wazirabad	3	4.61	0	0	0	0	0	0
c.		Jampur	4	6.15	0	0	0	0	0	0
d.		Khanewal	2	3.07	1	1.31	0	0	0	0
e.		Kot Adu	2	3.07	0	0	0	0	0	0
f.		DG Khan	5	7.69	4	5.26	0	0	0	0
g.		Chakwal	1	1.53	2	2.63	0	0	0	0
h.		Mianchannu	1	1.53	0	0	0	0	0	0
i.		Sheikhupura	1	1.53	0	0	0	0	0	0
j.		Bahawalpur	4	6.15	2	2.63	0	0	0	0
k.		Bhakkar	1	1.53	0	0	0	0	0	0
l.		Fazalpur	1	1.53	0	0	0	0	0	0
m.		Multan	4	6.15	0	0	0	0	0	0
n.		Sargodha	2	3.07	2	2.63	0	0	0	0
o.		Gujrat	2	3.07	2	2.63	0	0	0	0
p.		Sadiq Abad	2	3.07	0	0	0	0	0	0
q.		Faisalabad	2	3.07	0	0	0	0	0	0
r.		Gujranwala	0	0	1	1.31	0	0	0	0
s.		Sialkot	0	0	1	1.31	0	0	0	0
t.		Jhelum	0	0	5	6.57	0	0	0	0
u.	MB Din	0	0	2	2.63	0	0	0	0	
v.	Sahiwal	1	1.53	3	3.96	0	0	0	0	
w.	Wah	0	0	3	3.96	0	0	0	0	
<b>II.</b>	<b>KPK</b>		<b>04</b>	<b>2.66</b>	<b>02</b>	<b>1.33</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
a.	Cities	Peshawar	1	25	0	0	0	0	0	0
b.		Swat	1	25	0	0	0	0	0	0
c.		Besham	1	25	0	0	0	0	0	0
d.		Mardan	1	25	1	50	0	0	0	0
e.		Charsada	0	0	1	50	0	0	0	0
<b>II.</b>	<b>AJ&amp;K</b>		<b>02</b>	<b>1.33</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
a.	Cities	Rawalakot	1	50	0	0	0	0	0	0
b.		Bhimber	1	50	0	0	0	0	0	0
<b>IV.</b>	<b>Sindh</b>		<b>1</b>	<b>0.66</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
a.	City	Golarchi	1	100	0	0	0	0	0	0
<b>V.</b>	<b>Baluchistan</b>		<b>01</b>	<b>0.66</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
a.	City	Quetta	1	100	0	0	0	0	0	0
<b>TOTAL</b>			<b>72</b>	<b>48</b>	<b>78</b>	<b>52</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

**CONCLUSION**

The frequency of both HBV and HCV infection was found to be very less than that expected. This study suggests that the National preventive programs and strategies against both HBV and HCV are successful. However, still there is a dire need to carry out elaborated studies on the subject on frequent basis in order to assess the accuracy of National HBV and HCV control programs.

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