

Frequency of Hepatitis B and Hepatitis C in Blood Donors Visiting Blood Bank of Doctor's Trust Teaching Hospital Sargodha, Pakistan

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Abstract- BACKGROUND

A number of evaluations regarding frequency of HBV & HCV in general population have been carried out but only few focused blood donors visiting tertiary health care units. This study focuses upon gender distribution, age distribution and residential distribution (urban and rural) of Hepatitis B & C positive individuals, It also reflects most prevailing mode of transmission of these viruses among subjective individuals.

OBJECTIVES

To determine frequency of Hepatitis B & C in blood donors visiting blood bank of Doctor's Trust Teaching Hospital Sargodha.

METHODOLOGY

This is an observational cross-sectional study with prospective data, done through observation of blood screening test logs of 100 donors visiting blood bank of Doctor's Trust Teaching Hospital, Sargodha.

RESULTS

- Out of 90 male blood donors 33 are affected (HBV positive 8, HCV positive 25) while out of 10 female blood donors 6 are affected (HBV positive 2, HCV positive 4).
- 10% of affected individuals are less than 30 years of age while 29% are above 30 years of age.
- 10% of total subjective individuals have positive screening test for HBV.
- 29% of total subjective individuals have positive screening test for HCV.

CONCLUSIONS

Hepatitis C is more prevalent than hepatitis B in subjective population. Males are more affected than females by 5.5:1. Middle age group is more affected. Most common modes of transmission are needle pricking, dental and other surgical procedures.

Index Terms- Blood donors, Mode of transmission, Hepatitis B&C prevalence.

I. INTRODUCTION

Viral hepatitis is a serious public health problem affecting billions of people globally. Limited information is available on this issue in Doctor's Trust Teaching Hospital, Sargodha.

1: [This cross-sectional study was undertaken with the aim of determining the seroprevalence and risk factors of Hepatitis B virus (HBV) and hepatitis C virus (HCV) among blood donors <http://www.biomedcentral.com/1471-2458/13/50>].

2: [The World Health Organization (WHO) estimating that chronic hepatitis B & C affect over 500 million people world wide. The situation in Asia Pacific is particularly dire, with 74% of total hepatitis B population living in the region and 20% of Hepatitis C population living in South East Asia alone <http://www.who.int/csr/disease/hepatitis/Framework/en/index.html>].

3: [Data from the global Burden of Disease study 2010 (published in 2012) shows that's even with advances in treatment and the success of the hepatitis B vaccination program in many countries, the mortality rate of viral hepatitis in Asia pacific has risen from 695,000 deaths in 1990 to over one million deaths in 2010. The annual mortality rate associated with viral hepatitis is three times as high as HIV/AIDS and nine times as high as malaria in Asia pacific. <http://www.healthmetricsandevaluation.org/gbd>]

HEPATITIS B VIRUS

4 : [It is one of the most common viral infections in the world. The WHO estimates that two billion people have been infected with the hepatitis B virus and approximately 240 million people are living with chronic infections. The virus is highly infectious, around 50-100 times more infectious than HIV in cases of needle stick injury. Acute hepatitis B infections often go away within six months. However, if the infection becomes chronic, it may cause far more serious complications. The younger you are when you become infected, the more likely you are to develop chronic infection. Hepatitis B is transmitted through contact with the blood or other body fluids (i.e saliva, semen and vaginal fluid) of an infected person. It can be passed on from mother to child during childbirth. <http://www.worldhepatitisalliance.org/en/hepatitis-b.html>].

5 : [It is noted overall that 75% of patients with hepatitis B have liver cell cancer and cirrhosis. Healthy carriers then are also at risk.

Other risk factors may be duration of infection with Hepatitis B or co-infection with either Hepatitis D or Hepatitis C. <http://www.hepatitiscentral.com/hcv/hbv/lcc.html>

HEPATITIS C VIRUS

6: [It is different from hepatitis B in that the body is generally unable to clear the virus itself, known as ‘spontaneous clearance’, and the infection therefore becomes chronic. 4 out of 5 people develop a chronic infection, which may cause cirrhosis and liver cancer after 15-30 years. There are approximately 150 million people chronically infected with hepatitis C worldwide. In 2000, the WHO estimated that between three and four million people are newly infected every year. Hepatitis C is mainly spread through blood-to-blood contact. In rare cases it can be transmitted through certain in sexual practices and during childbirth. <http://www.worldhepatitisalliance.org/en/hepatitis-c.html>].

7: [Acute infection may occur with limited or no symptoms, or may include symptoms such as jaundice (yellowing of the skin and eyes), dark urine, extreme fatigue, nausea, vomiting and abdominal pain. <http://www.who.int/topics/hepatitis/en>]

8: [To dialogue hepatitis B the blood needs to be checked for the Hepatitis B surface antigen (HBsAg). The HBs antigen is a part of the virus and will usually appear in your blood six to twelve weeks after infection. For Hepatitis C, your doctor will first check for hepatitis C antibodies (anti-HCV). If the test is positive, it means virus is present now, or the virus had cleared out. Hepatitis C antibodies usually takes seven to nine weeks to appear in your blood after infection. <http://www.worldhepatitisalliance.org/en/prevention>]

RISK FACTORS

9: [Risk needle use or accidental stick, blood transfusion, hemodialysis, organ transplant, getting tattooed, piercing, unsafe sex, kidney diseases and blood clotting disorders. <http://www.webmd.com/hepatitis/hepb-guide/hepatitis-b-what-increases-your-risk>]

II. MATERIAL AND METHODOLOGY

Study design

Cross-sectional descriptive study

Study population

Blood donors visiting blood bank of Doctor's trust teaching hospital, Sargodha

Study Area

Blood bank, Doctor's trust teaching hospital Sargodha - Punjab Pakistan

Duration

3 weeks

Sample technique

Non-probability convenient sample

Inclusion criteria

Blood donors visiting blood bank of Doctor's trust teaching Hospital Sargodha - Punjab Pakistan

Exclusion criteria

Anyone who is not a blood donor in study area

Data collection procedure

Primary data has been used in this study. Data was collected through the blood bank laboratory screening logs.

Sample size

100 blood donors

OBJECTIVES:

- To determine the frequency of Hepatitis B & C in blood donors visiting blood bank Doctor's Trust Teaching Hospital, Sargodha - Punjab Pakistan.

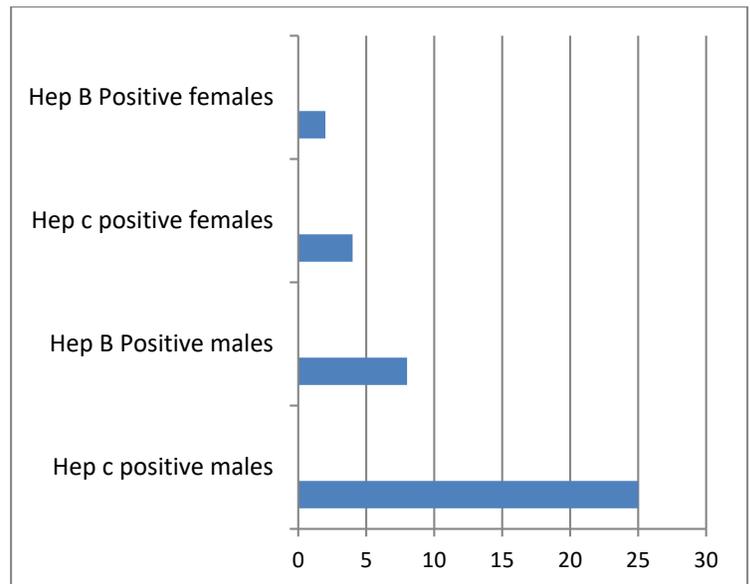
III. FINDINGS AND RESULTS

➤ **Table 1**

Frequency distribution of Hep B & C distribution among genders.

Types of virus	Affected Males	%age	Affected females	%age
Hep. B	8	8.9	2	20
Hep. C	25	27.8	4	40

N=100 (males=90, females=10)



(Table#1)

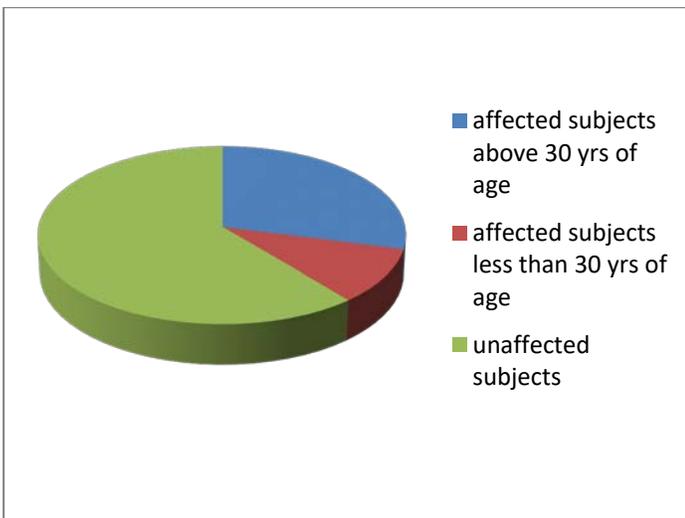
➤ **Table 2**

Frequency distribution of Hep. B & C among different age groups.

N=100

Age groups	No. of affected individuals	%age
Less than 30 yrs of age	10	10
Above 30 yrs of age	29	29

No. of unaffected individuals =61, %age =61%



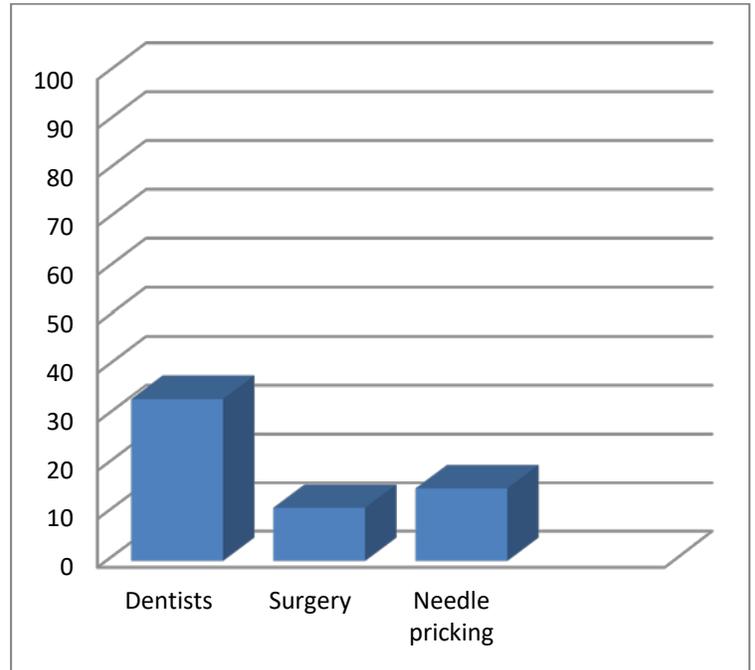
(Table#2)

Table 3

Frequency distribution of modes of transmission of Hep. B & C among subjects.

N=100, total no. of affected individuals =39

Modes of transmission	Frequency of affected individuals by the specific mode	%age
Dentist	13	33.34 %
Surgery	11	28.20 %
Needle pricking	15	38.46 %



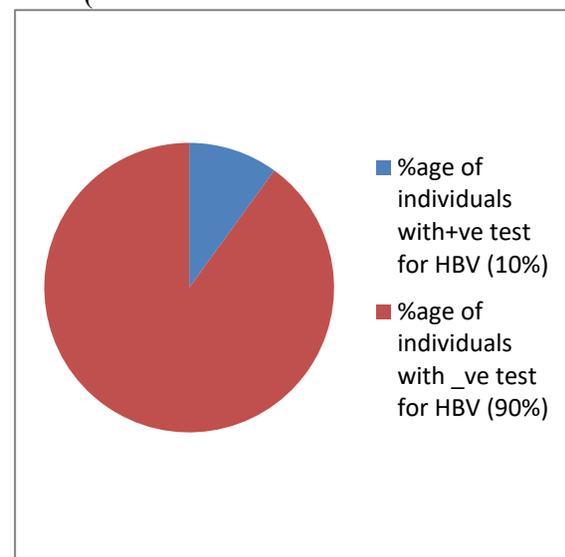
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➤ **Table 4**

Frequency distribution of subjective individuals with positive screening test for Hepatitis B virus.

Type of virus	No. of individuals with positive screening test	%age	No. of individuals with negative screening test	%age
HBV	10	10	90	90

(N=100)



(Table#4)

➤ **Table 5**

Frequency distribution of subjective individuals with positive screening test for Hepatitis C.

N=100

Type of virus	No. of individuals with positive screening test	% age	No. of individuals with negative screening test	%age
HCV	29	29	71	71

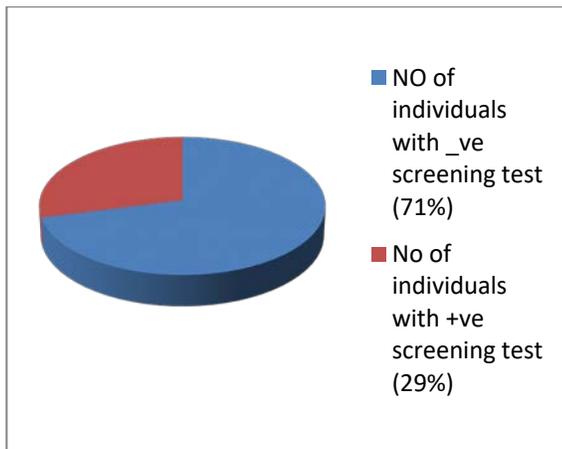


Table # 5

IV. DISCUSSION

Our study throws light on the current epidemiological status of viral hepatitis B and C infections among blood donors visiting Blood bank, Doctor's Trust Teaching Hospital Sargodha. This data shows that the prevalence of HBV is slightly lower than that of HCV in blood donors. The main transmission route in the blood donors is attributed to the nosocomial exposure to contaminated instruments, like dental, surgical instruments and needle pricking.

Even with a moderate prevalence, there may be a large reservoir of HCV and HBV infected persons in the region which indicates that many people are at risk of developing chronic liver disease related to viral hepatitis, added to the fact that antiviral therapy is not affordable by the vast majority of people in developing countries. Therefore, nosocomial risk prevention as well as health education among population are the main intervention that might help limiting the spread of these blood-borne infections.

Higher prevalence was observed in advanced age groups. First, anti-HCV and anti HBV screening among blood donors was not conducted throughout the region and the association of blood transfusion with HCV and HBV seropositivity should not be surprising, given that the blood product had not been previously

screened for HCV. Second, the higher prevalence of HCV in older people could be attributed to a longer exposure to risk factors for HCV transmission. Analyses by gender reveals that, the seroprevalence of hepatitis B and C among males is significantly higher than that found in females with no plausible explanation for the higher exposure to occupational HBV and HCV risk factors in men, or else females clear the HBV and HCV more efficiently as compared to males. Measurement of HBV seropositivity, has revealed that 10% of the 100 blood donors had HBV infection. The overall prevalence of HCV infection in the blood donors in our study is found to be 29%.

Pakistan has been placed by the WHO into the less prevalent zone for both hepatitis B and C; however, the exact number of persons infected is unknown for the reason that no large-scale epidemic data exist to assess the true HCV and HBV infection burden in Pakistan. Although a few studies have been carried out, they were affected by a selection bias because most studies are generally based on subjects from risk groups or blood donors with lacking information on children and senior citizens not generally included in as specialized groups.

V. CONCLUSIONS

From our study, following conclusions can be drawn,

- Hepatitis C is more prevalent than Hepatitis B in the population according to our study using a sample of 100 blood donors.
- Among gender distribution of Hepatitis, Males were more affected than females by 5.5 : 1
- According to age distribution of hepatitis, people more than 30 years of age were more affected (29 affected) than people under 30 years of age (10 affected) in a combined sample of 100 people taken for the study.
- The most common mode of transmission among these patients was needle pricking (15 people). Second to that was through dental procedures (13 people) and then through surgical procedures (11 people). None of the affected people were unaware of the mode of transmission.
- Patients of Hep. B diagnosed were 10 out of 100 people by the screening test at blood bank, Doctor's Trust Teaching hospital Sargodha - punjab Pakistan.
- Patients diagnosed of Hep. C were 29 among a sample of 100 people.

VI. RECOMMENDATIONS

- Regular screening camps should be planned by health centers for early diagnosis and prevention of prevailing hepatitis in our community.
- Health education about promotion of screening tests and its importance should be given at community level.
- People should be educated about care from needle pricks and sharing needles, that is the main cause for prevailing hepatitis in our community. Limited availability of information

was observed at the institute during research work.

- Blood screening tests before blood transfusions should be made necessary.
- For prevention from this disease, vaccination programs should be extended and promoted

REFERENCES

- [1] Mentioned above in paragraphs.

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