

ORIGINAL ARTICLE

Association of Viral Hepatitis with Different age GroupNAILA MEMON¹, NASEEM², SIDRAH³, KIRAN MEMON⁴, ANEELA FAISAL MEMON⁵, KIRAN AAMIR⁶, AAMIR RAMZAN⁷, FARHAN AHMED SHAIKH⁸¹Senior WMO, consultant physician, Liaquat university hospital Hyderabad.²WMO in population Welfare Department Moro district Noushero feroze³Resident Histopathology, Lecturer at Bilawal Medical College for boys, Liaquat university of Medical and health sciences jamshoro hyderabad⁴Assistant professor in Pathology Department Indus medical college Tando Muhammad Khan⁵Assistant professor in pathology department Muhammad medical college Mirpurkhas⁶Associate professor in Pathology Department Liaquat university of Medical and health sciences jamshoro Hyderabad.⁷Lecturer in Pathology Department Liaquat university of Medical and health sciences jamshoro Hyderabad⁸Lecturer, Consultant Haematologist, Pathology department, Bilawal Medical College for boys, Liaquat university of Medical and health sciences jamshoro HyderabadCorresponding author: Naila Memon, Email: doctor_memon76@yahoo.com, Cell: 03362322268**ABSTRACT****Objective:** Aim was to determine the frequency of hepatitis B and C with different age groups.**Study Design:** Retrospective study**Place and Duration:** Medicine ward Liaquat university of Medical and health sciences jamshoro Hyderabad. Jan2022 to December 2022**Methods:** Total 129 patients of both genders screened for hepatitis. Detailed demographic information, such as age, socioeconomic position, and place of residence, was recorded for enrolled cases after informed written consent was obtained. Antibody testing for hepatitis B virus (antiHBs) and hepatitis C virus (antiHCV) is conducted in a medical facility. Frequency of hepatitis with respect to age groups were identified. SPSS 24.0 was used to analyze all data.**Results:** In 129 patients, 74 (57.4%) were males and 55 (42.6%) cases were females. 87 (67.4%) patients had poor socioeconomic status and 42 (32.6%) patients had high status. 79 (61.2%) patients were from urban residency. Among all, 70 (54.3%) patients were positive for HBV and 59 (45.7%) cases were positive for HCV. In 70 cases of HBV, 22 cases were aged between 3-15 years, 25 cases were aged between 16-30 years, 17 cases had age 31-45 years and 6 cases had age >45 years. In 59 cases of HCV, 15 cases had age 3-15 years, 27 cases had age 15-30 year, 13 cases had age 31-45 years and 4 cases had age >45 years.**Conclusion:** We concluded in this study hepatitis B was more prevalent among all cases as compare to HCV. Patients of age 15-45 years were diagnosed with higher number of viral hepatitis. It is crucial that community efforts to raise awareness of HBV and HCV and the value of vaccination continue unabated.**Keywords:** Hepatitis C, Hepatitis B, Gender, Age Group**INTRODUCTION**

Infectious liver illness caused by the hepatitis B virus, often known as serum hepatitis. Hepatitis B virus (HBV) is a member of the family of viruses called hepadnaviridae [1-2]. Unlike HIV and HCV, hepatitis B virus infection is easily spread from person to person. It has a 50-100-fold higher infectious potential than HIV and a 10-fold higher potential than hepatitis C virus. The liver illness caused by HBV is known as the "silent killer" because many infected people are unaware of their condition. [3].

Nearly 2 billion individuals are at risk of contracting the infection, and an estimated 350 million people worldwide have chronic hepatitis B [4]. In contrast to the United States, Western Europe, and Australia, where the disease is relatively uncommon, HBV is most common in poor countries in Asia, Africa, and the Pacific. As a country in the global South, Pakistan has a particularly severe epidemic of viral hepatitis. According to research, hepatitis B has become a major public health issue in Pakistan, leading to a rise in both morbidity and mortality. With 3 percent of its population harboring HBV infection, Pakistan is considered an endemic region by the World Health Organization. Although the exact rate of HBV exposure in Pakistan is unknown, little data there is suggests that between 35% and 38% of the population is infected, 4% are carriers, and 32% have anti-Hepatitis B virus surface antibodies as a result of natural conversion [5].

Kerala has the lowest HAV antibody seroprevalence rates in India, with around 4-5% of the population [6]. This is likely due to the state's generally higher standard of living. Uttar Pradesh and surrounding area local data is still lacking. Although hepatitis A vaccine at 12 months of age is recommended, it is not yet a part of the mandatory routine vaccination schedule [7]. This is according to the Indian Academy of Pediatrics (IAP) 2016 Immunization Schedule. Since hepatitis A also places a significant financial strain on the government, it is important to have adequate

epidemiological data before incorporating the vaccine into the normal vaccination schedule.

There are between 62 and 79 million people infected with HCV, a virus that is spread by blood. Liver cancer, fibrosis, and cirrhosis are all made worse by HCV. The virus threatens to overwhelm the current healthcare system. Infection with the virus that causes hepatitis C can be either acute or chronic. Twenty-five to thirty-five percent of patients experience acute infection, and fifteen percent of those infected go on to develop liver disease with symptoms [8]. Seventy-five percent to eighty-five percent of those with a persistent acute infection will develop chronic HCV infection; ten percent to twenty percent of those with chronic HCV will develop cirrhosis; and one to five percent will develop hepatocellular cancer. [10]

Concerns regarding the decline in immunity and the necessity for a booster vaccine for cohorts who got the HBV immunization in infancy prompted us to consider the consequences of contracting HBV infection in hosts of varying ages and immune systems [11,12]. It may be time to revisit the national hepatitis B vaccination program, which has been in place for >25 years [13]. This can be done through disease surveillance and seroepidemiological studies of hepatitis B immunity and carrier prevalence.

Our research aimed to compare the prevalence of hepatitis B and C across age groups.

MATERIALS AND METHODS

This retrospective study was conducted at Medicine ward Liaquat university of Medical and health sciences jamshoro Hyderabad and comprised of 129 patients. Detailed demographic information, such as age, socioeconomic position, and place of residence, was recorded for enrolled cases after informed written consent was obtained. Pregnant females, patients with severe medical illness and those did not provide written consent were excluded.

Tests for Hepatitis B virus surface antigen (HBsAg), anti-Hepatitis B surface antibody (antiHBs), and anti-Hepatitis C virus (anti-HCV) were analyzed as part of the research project. The tests were run with ELISA kits and a fully automated Roche Modular E-170 apparatus (both from Roche Diagnostics, in Basel, Switzerland). For both HBsAg and anti-HCV, findings that were at or above the cutoff threshold were considered positive, whereas an anti-HBs value below 10 IU/mL was also indicative of positivity. Patients who underwent numerous tests had their first result considered so that no unnecessary tests would be performed. Patients with Chronic HBV have been excluded from repeat control testing. Since the launch of the National Hepatitis B Vaccination Program (NHPVP) in 1998, hepatitis B has been almost eradicated throughout Turkey.

The statistical analyses were performed using Stata version 24.0. Quantitative comparisons were made using the Student's t-test, and qualitative ones using the chi-square test. The significance level was set at a p-value of less than 0.05.

RESULTS

In 129 patients, 74 (57.4%) were males and 55 (42.6%) cases were females. 87 (67.4%) patients had poor socio-economic status and 42 (32.6%) patients had high status. 79 (61.2%) patients were from urban residency. 45 (34.9%) patients were had smoking history.(table 1)

Table-1: Participant characteristics

Variables	Frequency	Percentage
Gender		
Male	74	57.4
Female	55	42.6
Socio-economic status		
Poor	87	67.4
High	42	32.6
Place of living		
Rural	79	61.2
Urban	50	38.8
Smoking History		
Yes	45	34.9
No	84	65.1

Among all, 70 (54.3%) patients were positive for HBV and 59 (45.7%) cases were positive for HCV.(figure 1)

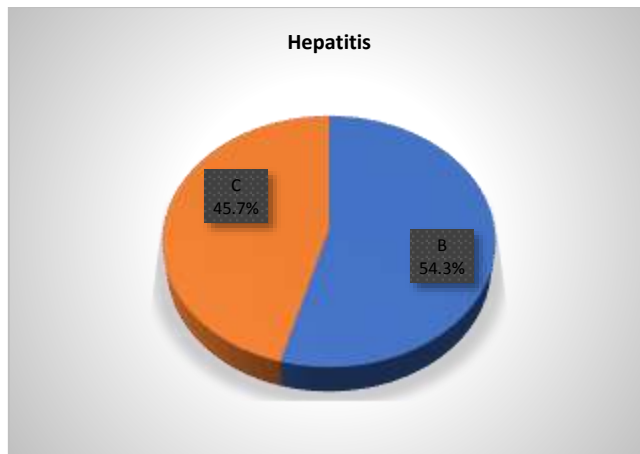


Figure-1: Frequency of HBV and HCV among all cases

In 70 cases of HBV, 22 cases were aged between 3-15 years, 25 cases were aged between 16-30 years, 17 cases had age 31-45 years and 6 cases had age >45 years. In 59 cases of HCV, 15 cases had age 3-15 years, 27 cases had age 15-30 year,13 cases had age 31-45 years and 4 cases had age >45 years.(table 2)

Table-2: Frequency of HBV and HCV with age groups

Variables	HBV (70)	HCV (59)
Age Group		
3-15 years	22	15
16-30 years	25	27
31-45 years	17	13
>45 years	6	4

DISCUSSION

The study found that among people who had never taken part in hepatitis screening, the chance of being HBsAg positive and the prevalence of HCV were both correlated with the level of socioeconomic hardship in the local municipality. Both viruses were linked to higher rates of socioeconomic disadvantage. This is the first time a link between hepatitis virus screening outcomes and municipal socioeconomic deprivation level has been reported in Japan, although it is known that the risk of liver cancer mortality varied based on socioeconomic deprivation level [14]. Positive HBsAg and elevated HCV incidence were also linked to higher levels of socioeconomic deprivation, as measured by the major component that is regarded as people's low socioeconomic position. Therefore, it is thought that the age and socioeconomic condition of people living in a municipality, rather than the rurality of the municipality itself, are positively connected with the outcomes.[15] Although results varied by location, we found a good association between them across jurisdictions. Both outcomes are linked to older age and higher levels of socioeconomic deprivation in the municipality, suggesting that the two are related.

In current study 129 patients were presented. In 129 patients, 74 (57.4%) were males and 55 (42.6%) cases were females. 87 (67.4%) patients had poor socio-economic status and 42 (32.6%) patients had high status. 79 (61.2%) patients were from urban residency. Results were inline with the previous studies.[16,17] Among all, 70 (54.3%) patients were positive for HBV and 59 (45.7%) cases were positive for HCV. Increased HBV Males may be more susceptible to infection than females because they are more likely to engage in risky behaviors such as working outside the home, going to barbershops, and receiving blood transfusions. Women, due to social, cultural, and religious influences, tend to take on more domestic responsibilities.[18] In 70 cases of HBV, 22 cases were aged between 3-15 years, 25 cases were aged between 16-30 years, 17 cases had age 31-45 years and 6 cases had age >45 years. In 59 cases of HCV, 15 cases had age 3-15 years, 27 cases had age 15-30 year,13 cases had age 31-45 years and 4 cases had age >45 years. People between the ages of 21 and 40 have the highest infection rate, with those between the ages of 41 and 60 coming in second [19]; this was also documented by Alam et al. HBV infection occurred far less commonly in people who were extremely young or very old. In addition, the findings by Castolo et al. in 2001 [20] corroborated our observation that the prevalence of HBV infection is greatest in individuals younger than 40 years of age. The higher rates of HBV infection among young respondents may be attributable to their increased exposure to and participation in society than that of younger and older respondents.

Previous studies have connected HBV infection to continuous use of injectable equipment [22] and to blood transfusion as a major infection vector for HBV and HCV in the 20th century [21]. There is still a significant risk of infection while receiving a blood transfusion or using injectable equipment in developing countries [23]. The infection rate of these viruses is correlated with the hygienic environment of places. Thus, it is possible that the infection rate from blood transfusion or injections in 20th-century Japan fluctuated according to areal socioeconomic deprivation levels, despite the lack of evidence supporting this notion. Another common way for people in Japan to contract HBV is through s*xual transmission [24].

We also found that the percentage of males who tested positive for HBsAg and antiHBs was much greater than the

percentage of females. The NHPVP made a difference between the generations of children born before and after it. This suggests that prior to the NHPVP, males were more likely than females to have been exposed to HBV. Some high-risk procedures that don't use aseptic and antiseptic measures are blood brotherhood (two or more men swearing loyalty to each other in a ceremony known as a blood oath, in which the blood of each man is mingled together), circumcision, and using an alum stone while shaving at the barbershop. Traditional circumcised women in Nigeria and Yemen were reported to have a higher prevalence of HBsAg than their non-circumcised counterparts in these studies[25,26].

Screening for HCV is lowest among those who have lower levels of education, poorer incomes, and do not have access to private health insurance [27]. It would be instructive to undertake an epidemiological investigation to see if the rate of hepatitis virus screening varies with levels of socioeconomic hardship. If the screening participation rate is poor in severely underprivileged communities, an education campaign about the benefits of screening is required. Furthermore, as was mentioned, the rate of HBV vaccination or awareness of the hepatitis virus may vary according to the degree of deprivation. Future research into those matters will be helpful.

CONCLUSION

We concluded in this study hepatitis B was more prevalent among all cases as compare to HCV. Patients of age 15-45 years were diagnosed with higher number of viral hepatitis. It is crucial that community efforts to raise awareness of HBV and HCV and the value of vaccination continue unabated.

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