

Prevalence of Viral Hepatitis B and C in Patients Admitted in Maxillofacial Unit of Liaquat University Hospital Pakistan

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ABSTRACT

Background: The objective is to know the seroprevalence of Viral Hepatitis B and C and to evaluate the possible associated risk factors for Hepatitis B and C. **Methods:** This Prospective descriptive serological study was conducted at the oral and maxillofacial surgery ward of Liaquat University of Medical and health sciences from Jan 2018 to July 2018. Patients of either gender and all age groups were included in the study as per inclusion criteria. Data was recorded on predesigned proforma including demographic data, clinical and serologic findings by device method in diagnostic and research laboratory LUMHS. **Results:** A total of 200 patients were included in the study. The age was from 14-69 years with a mean age of 37+13 years. The gender distribution of the patients was 112(56%) males and 88(44%) females. Hepatitis-B infection was present in 16(8%) cases and Hepatitis-C in 23 (11.5%). Hepatitis-B and C were negative in 161 (80.5%) cases. Among all No. of patients family history of Hepatitis 22(8%) in which Hepatitis B & C negative (n=161) were 14(8.6%) and B & C positive (n=39) were 8(20.5%), Dental visits procedure 20(10%) in which B & C negative (n=161) were 14(8.6%) and B & C positive (n=39) were 6(15.3%), Barber visits (among male) 94(83.9%) in which B & C negative (n=112) were 79(84.9%) and B&C positive (n=19) was 15(78.9%). In the history of blood transfusion, among all patients were 41(20.5%) in which Hepatitis B and C negative (n=161) was 30(18.6%) and B & C positive (n=39) were 11(28.2%), intravenous injections among all patients were 139(69.5%) in which Hepatitis B and C negative (n=161) was 113(70.1%) and Hepatitis B and C positive (n=39) were 26(66.6%) and 21(10.5%) cases were found to be vaccinated against Hepatitis-B. **Conclusion:** There is a role of unhygienic health delivery practices, lack of awareness and resources for standard screening protocol for the spread of Hepatitis B and C.

Keywords: Hepatitis B, Hepatitis C, Risk factors, Prevention, Awareness.

INTRODUCTION

Hepatitis B infection contamination is a noteworthy medical issue with >350 million people influenced globally.^[1] “Hepatitis C infection is perceived as a sickness of global significance”.^[2] “Mostly 170 million individuals are constantly contaminated”, “and the sickness can prompt indistinguishable antagonistic results from on account of Hepatitis B”.^[3] “Both infections are known to reason in favor of infectivity prompting noteworthy dismalness as well as mortality overall particularly in the creating nations like Pakistan”.^[4] “It is very endemic for hepatitis B and hepatitis C about Pakistan”.^[5] “In the created world the commonness of Hepatitis B is more than hepatitis C while in Pakistan Hepatitis C is more pervasive than B”.^[6] “Generally frequency of both infections when all is said in done Pakistani

populace runs between 4-25%”.^[7,8] “as well as the noteworthy greater part of hepatitis B positive in all age gatherings are guys while lion's share of females is Hepatitis C positive”.^[9,10]

“As in Pakistan, the pervasiveness of Hepatitis B and C was around 4 percent and 6 percent respectively”.^[11,12] The explanations behind high commonness are multifactorial like a transfusion of despicably screened blood”, “managing infusions through unsanitized by social insurance laborers as well as quacks”, “body penetrating through unsterilized needles in addition to shaving by messy barbers”.^[13,14] Similarly, “sharing syringes by intravenous medication abusers is a noteworthy hazard calculate in favor of Hepatitis B and C globally”.^[15,16]

“It was not screened Hepatitis B as well as C routinely in a larger part of Pakistani healing facilities in past”. “Just known instances of HBV and HCV were managed prudent care”. “After that related danger point in charge of HV and HB transmission were”, “blood transfusion”, “surgical gear”, “polluted needles”, “self pricks surgical disposables as well as surgical procedures”.^[9]

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“Dental specialists are the most profoundly uncovered gathering and numerous dental specialists experience a needle stick or cut of finger skin exceptionally often”.^[17-19] “Because of the way of intrusive medicinal instruments utilized as a part of dentistry”, “the transmission of blood-borne infections in dental workplaces is a potential risk to both patients and dental staff”. “Around the world”, “dental social insurance laborers encounter a higher shot of HBV disease than of other bloodborne infections like HC and HB frequencies increment with years of clinical experience as a dental specialist”.^[20,21] “Additionally a higher predominance of HBV disease particularly” “among surgical claims to fame contrasted with the all-inclusive community has been accounted for”^[22,23]

“HBV and HCV are called blood-borne infections”, “it gives the idea that the infection is originating from the group to the household” “individuals in addition to the conceivable sources are treating doctors utilizing a reused syringe”, “dental specialists and barbers”.^[24]

“This study aimed to investigate the risk factors responsible for the seroprevalence of Hepatitis B and C”. “Prevalence studies of hepatitis B and C gives us an idea of the magnitude of the disease in a community” “an enable us to understand the dynamics of its transmission and so that emphasis could be stressed on awareness and health education for prevention”.

MATERIALS AND METHODS

This Prospective descriptive serological study with non-probability purposive sampling comprising of 200 patients was conducted at the oral and maxillofacial surgery ward of Liaquat University of Medical and health sciences from Jan 2018 to July 2018.

Inclusion criteria:

- All admitted patients of any age group and either gender
- Symptomatic or asymptomatic clinically.

Exclusion criteria:

- Patients with bleeding disorders.
- Patients suffering from a liver disease other than viral hepatitis like cirrhosis and hepatocellular carcinoma.

Data Collection Procedure:

Patients meeting the inclusion criteria coming and admitted in the Oral and maxillofacial surgery ward of LUMHS were included in this study. Written consent was taken from every patient/attendant. Data was recorded on predesigned proforma including demographic data, clinical and serologic findings by device method in diagnostic and research LAB LUMHS and various risk factors

associated with each patient. Data were analyzed by SPSS version 20.0.

RESULTS

Table 1: Gender distribution of patients.

Gender	Frequency	%
Male	112	56
Female	88	44
Total	200	100
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Male	112	56
Female	88	44
Total	200	100

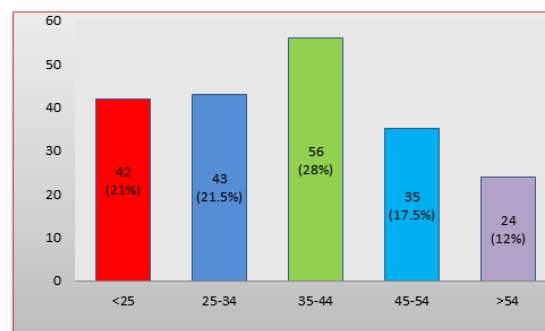


Figure 1: Age distribution n=200

Table 2: History of personal awareness of hepatitis B & C from the patient

Personal Awareness Of Hepatitis	Frequency	Percent
No	186	93
Yes	14	7
Total	200	100

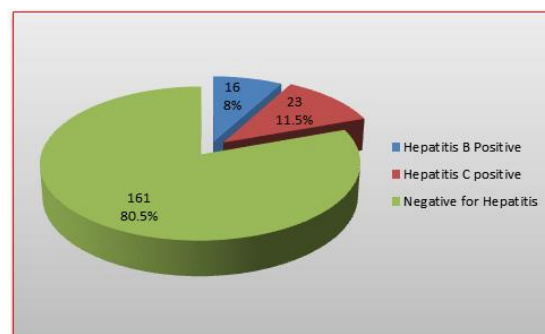
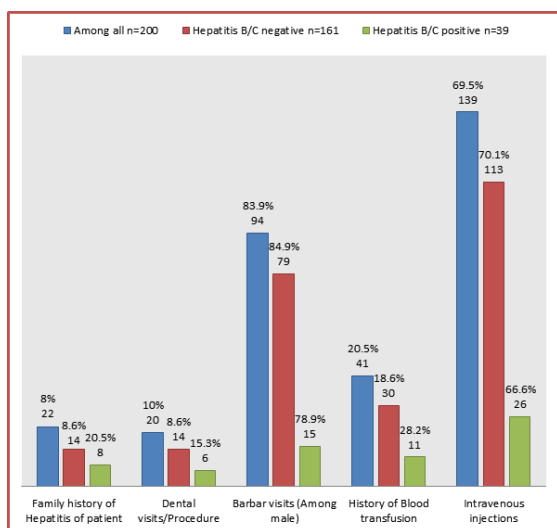


Figure 2: Presentation of hepatitis-b and hepatitis-c seropositivity during pre-operative screening (n=200)

A total of 200 patients were included in the study. The gender distribution of the patients reported was 112(56%) males and 88(44%) females [Table 1]. The age range was in between 14-69 years with a mean age of 37+13 years. Patients of age distribution less than 25 age of patients were 42 (21%), 25-34 age of patients were 43 (21.5%), 35-44 age of patients were 56 (28%), 45-54 age of patients were 35 (17.5%), more than 54 age of patients were 24 (12%) as shown in [Figure 1]. In this study most patients had no awareness about the hepatitis B and C virus i.e. there are 14 (7%) patients had awareness and 186(93%) had not awareness. [Table 2]

Table 3: Demographic characteristics (Hepatitis HBV and HCV antibodies positivity with Gender and Age distribution)

Demographic characteristics		Hepatitis B (n=16)	Hepatitis C (n=23)
Gender	Male	10 (62.5%)	9 (39.13%)
	Female	6 (37.5%)	14 (60.86%)
Age	<25	1 (6.25%)	7 (30.43%)
	25-34	3 (18.75%)	1 (4.35%)
	35-44	4 (25.0%)	7 (30.43%)
	45-54	4 (25%)	3 (13.04%)
	>54	4 (25%)	5 (21.74%)

**Figure 3: Various Risk Factors Exposure In Relation To Hepatitis-B And Hepatitis-C Serology**

Hepatitis-B infection was present in 16(8%) cases and Hepatitis-C in 23(11.5%). Hepatitis-B and C was negative in 161 (80.5%) cases as shown in [Figure 2]

A total of 39 patients was found positive for hepatitis B and C, in which Hepatitis B positive were 16 patients and Hepatitis C positive 23 patients. In gender distribution HBV antibodies positivity prevalence (n=16) was in Male 10 (62%) and in female 6 (37.5%) in contrast to gender distribution HCV antibodies prevalence (n=23) was in Male 9 (39.13%) and in female 14 (60.86%). In age distribution HBV antibodies prevalence (n=16) was in less than 25 age of patients were 1(6.25%), 25-34 age of patients were 3 (18.75%), 35-44 age of patients were 4 (25%), 45-54 age of patients were 4(25%), more than 54 age of patients were 4 (25%) in contrast to HCV antibodies prevalence (n=23) were 7 (30.43%), 25-34 age of patients were 1 (4.35%), 35-44 age of patients were 7(30.43%), 45-54 age of patients were 4(13.04%), more than 54 age of patients were 5(21.74%). [Table 3]

Among all patients, there was family history of Hepatitis 22(8%), in which Hepatitis B & C negative (n=161) were 14(8.6%) and B & C positive (n=39) were 8(20.5%), Dental visits procedure was mentioned by 20 patients (10%) in which B & C negative (n=161) were 14(8.6%) and

B & C positive (n=39) were 6(15.3%). Barber visits (among male) was mentioned by 94(83.9%) in which B & C negative (n=112) were 79(84.9%) and B & C positive (n=19) was 15 (78.9%).

A total 41 (20.5%) had a history of blood transfusion, in which Hepatitis B and C negative (n=161) were 30 (18.6%) and B & C positive (n=39) were 11 (28.2%), intravenous injections among all patients were recorded by 139 (69.5%) in which Hepatitis B and C negative (n=161) was 113 (70.1%) and Hepatitis B and C positive (n=39) were 26(66.6%) and 21(10.5%) cases were found to be vaccinated against Hepatitis-B.

DISCUSSION

“Our country is one of the most exceedingly bad tormented nations through hepatitis B as well as hepatitis C infection”, “approximately 350 million individuals with incessant hepatitis B infection contamination and around 170 million individuals with perpetual hepatitis C infection disease around the world”. “Infection of hepatitis C in our country is at the very high ratio in comparison with the other country like India”, Nepal, Myanmar, Iran and Afghanistan. “Due to expanding mindfulness about inoculation as well as a screening of blood for hepatitis B through blood donation centers”, “hepatitis B in Pakistan has dropped through the years from 10 % to 4 percent”. “Though, “the commonness of hepatitis C has ascended because of dishonorable screening benefactors and different methods of transmission”. “It is at present the significant reason for liver infection-related mortality and horribleness in Pakistan with a substantial effect on social insurance”.

Dental and medical dealings may bear a momentous risk of hepatitis C and B infection.^[25] The elevated prevalence of seropositivity for anti-HCV and anti-HBc in our study subjects with a history of earlier dental treatment stresses the significance of efficient infection control methods to be practiced by dentists. In developing countries” dental practice by unregistered practitioners is widespread. “These nonmedical recruits and even some practiced dentists do not properly sterilize their equipment and thereby convey blood-borne infections to their patients”.^[26] “To prevent iatrogenic transmission of the infection it is essential to adhere to strict universal precautions and improve basic hygiene”.^[27]

“A healthier understanding of the occurrence of HBV infection and linked risk factors provides insight into the diffusion of this infection in the population”. Therefore, “educational intrusion targeted on healthcare professionals about the importance of infection control measures may include safe injection practices and proper sterilization of medical and dental instruments”. “Tutoring of barbers about the implication of sterilization of their instruments may assist in

reducing the burden of community-acquired infectivity with HBV".^[28]

"In a different research, there was the superior prevalence of HCV and HBsAg among the group of patients who acknowledged transfusions before the systematic screening of blood donors". "So exposure to blood transfusions was the chief risk factor for HCV and HBV infection". "Systematic serological screening of blood donors played a major role in reducing transfusion of transmitted infections".^[29] "In the absence of effective screening programs", "hepatitis B virus is responsible for a substantial proportion of cases of post-transfusion hepatitis", "An expected 2 billion people are infected with HBV worldwide, among them 350 million are chronic carriers: hepatitis B surface antigen (HBsAg) positive".^[30]

"For the prevention of HBV, a potent vaccine is available which has over 95% protection rates". "No vaccine is available for HCV". "In Pakistan, the regularity of HCV appears to be mounting and the likely sources include recurrent injections for insignificant ailments", "shaving by barbers", "dental procedures and blood transfusions along with surgeries". "Inappropriate sterilization of medical and surgical equipment and recycling of syringes has been reported to be the major aspect for this high boost in uncontrolled studies".^[31]

Intravenous drug use, needle stick injuries, hemodialysis, tattooing and multiple sexual partners have been identified as common modes of HBV transmission in the developed world.^[32] Parental routes implicated as the most likely factors for HBV transmission include un-sterilized needles and syringes in health-care settings. Many studies have shown the relationship between therapeutic injections using non-sterile needles and the transmission of HCV.^[33]

"Since viral hepatitis is generally more common in such countries", "work permission of the group is more serious. This is risk can be reduced by preventing unqualified dentists from working". If achieving this aim is too difficult, health policymakers can make unqualified dental practitioners participate in infection control programs, so that they can be informed of the importance of safe hygienic procedures. In a study on blood donors, HBV infection in known high-risk occupations such as dentists was not shown to be a risk factor.

"During recent years special attention was dedicated to educating dentists on probable occupational infection". "Using personal protective equipment such as gloves", "shields", "facemasks and HBV vaccination reduced the prevalence of dentists infected by viral hepatitis dramatically".^[34] About the relationship between tooth extraction and viral hepatitis infection obtained in a couple of studies,^[35] it seems too superficial to consider the role of dental treatment as an independent viral

hepatitis risk factor, while socioeconomic status, as well as other conditions of the participants, also affect the results. Also, people with lower socioeconomic status who are exposed to viral hepatitis risk factors prefer to use cheaper dental care such as tooth extraction sometimes performed by unqualified dentists due to economical restrictions. Also, dental problems such as tooth loss are observed in specific conditions such as addiction more commonly. Attention to such confounding factors may help us better to secure the risk factors of viral hepatitis infection.

CONCLUSION

"Hepatitis B and C can be transmitted by skin prick with infected", "contaminated needles and syringes, or through accidental inoculation of minute quantities of blood during dental procedures". Therefore, "proper preventive measures must be adopted with strict protocol to prevent the transmission of the virus from the dental practitioner to the patient and the patient to the dentist". "Prevention is an important aspect in controlling the spread of this viral infection as an epidemic". "Knowing facts", "having proper awareness", "and proper behavior and attitude toward clinical aspects of the infection and toward the patients is critical to prevent the spread of these infections". "The role that a dentist can play in the prevention of hepatitis is by considering every patient as a potential carrier of hepatitis". "Proper infection control and sterilization protocols should be followed to reduce the risk of infection". "In Pakistan there an urgent need to raise the public awareness about the importance of properly screened blood transfusion", "use of disposable needles and using new blades for shaving and haircuts especially at barbers shops".

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