

## SCREENING OF HEPATITIS B INFECTION AMONG DENTAL DOCTORS STUDENTS AND DENTAL STAFF IN A PRIVATE DENTAL COLLEGE IN BIHAR

Dr. Nimmi Singh<sup>1\*</sup>, Dr. Devika Singh<sup>2</sup>, Dr. Kusum Vinti C.<sup>3</sup>, Dr. Anupama Singh<sup>4</sup>,  
Dr. Leena Priya<sup>5</sup> and Dr. Neha Kumari<sup>6</sup>

\*<sup>1</sup>Reader, Department of Oral Medicine & Radiology, Buddha Institute of Dental Sciences & Hospital, Patna.

<sup>2</sup>Senior Resident, Indira Gandhi Institute of Medical Sciences, Patna.

<sup>3,4,5,6</sup>MDS Department of Oral Medicine & Radiology, Buddha Institute of Dental Sciences & Hospital, Patna.

Article Received on  
21 Jan. 2018,

Revised on 11 Feb. 2018,  
Accepted on 03 Mar. 2018,

DOI: 10.20959/wjpr20185-11361

### \*Corresponding Author

**Dr. Nimmi Singh**

Reader, Department of  
Oral Medicine & Radiology,  
Buddha Institute of Dental  
Sciences & Hospital,  
Patna.

### ABSTRACT

**Aim:** To evaluate the prevalence of Hepatitis B among students, faculty members and dental staff in a private dental college in Bihar. **Material and method:** This study was conducted on a study group on 470 participants who were tested for Hepatitis B. **Result:** None of the students tested positive whereas 1 dental faculty and 2 dental staff were tested positive for Hepatitis B and p value was significant. **Conclusion:** The results showed that there is increasing awareness regarding Hepatitis B and hopefully we would be able to eradicate Hepatitis B in the years to come.

**KEYWORDS:** Hepatitis B, Dental Doctors.

### INTRODUCTION

The constant increase in number of Hepatitis cases worldwide is a leading cause of concern for cross infection among dental health workers and patients seeking dental care. Dental professionals are constantly exposed to blood and blood fields thereby putting them at increased risk of cross infection as well as the putting their patients in danger as the disease is transmissible.<sup>[1]</sup> In Asia, Hepatitis virus is a common finding and its occurrence in Africa and Europe is remarkable.

Hepatitis B (formerly known as “serum hepatitis“ is an acute systemic infection with major pathology in liver caused by HBV and transmitted usually by parenteral route.<sup>[2]</sup>

It has been observed that HBV and primary liver cancer are closely associated and every year a large number of these chronically infected patients die of disorders like liver cancer and cirrhosis.<sup>[3]</sup> To minimize the risk of cross infection in dental clinic special recommendation have been issued by professional health agencies.

These agencies recommends use of barrier technique (gloves, masks) heat sterilization of dental instruments, vaccination against HBV, and universal precaution. Dentist compliance with these recommendation and infection control programme has been recently studied in different part of the world. These studies indicate that dentists are lagging in their knowledge regarding mode of transmission of infectious disease, the risk of infection from needle sick injuries and awareness about general measures which protect against HBV and HCV transmission.<sup>[4]</sup> More studies of active immunoprophylaxis(vaccination) to prevent hepatitis B have been made. The hepatitis B virus vaccine is totally unique product.<sup>[5]</sup>

These studies showed that dentists are at higher risk of exposure to hepatitis virus and their awareness regarding Hepatitis vaccines is limited. A dentist can play a major role in the prevention of hepatitis by considering each and every patient as a potential carrier of hepatitis. Proper infection control, sterilization, and prophylactic vaccination protocols should be followed in order to reduce the risk of hepatitis.<sup>[6]</sup>

The aim of this article is to study the prevalence of Hepatitis B in Dental College in Bihar.

## **MATERIAL AND METHODS**

A cross-sectional study carried out among dental faculty, dental students and dental healthcare workers who were working in Buddha institute of dental science and hospital, Patna The dental college has an intake of 100 students every year. At the time of data collection, there were 79 students in first year, 57 in second year, 63 students in third year, 85 students in final year, and 80 interns presents. 50 faculty members and 120 dental staff were included in the study. All the students were invited to take part in the study. The objectives of the study were explained to the participants and only those who were willing to participate in the study were included. Hence, total sample comprised of 216 Indian dental students. Clinical data were recorded from the dentist during the period. The students were instructed

to undergo vaccination for Hepatitis and follow the preventive measures in order to minimize the risk of transmission

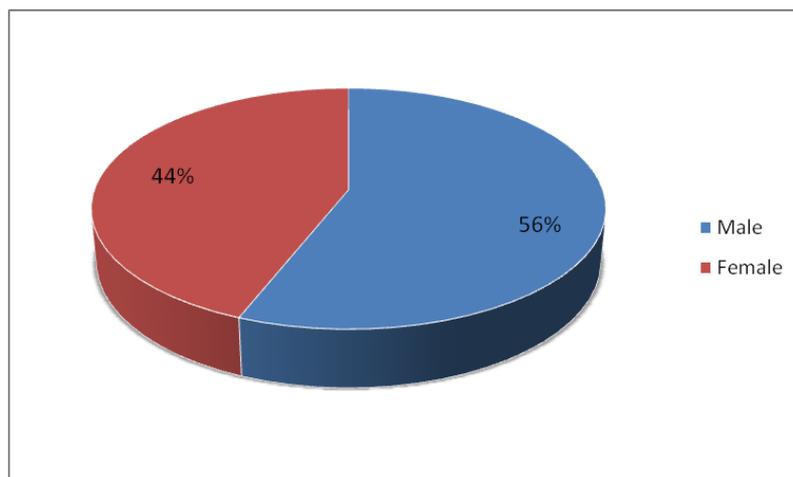
### INCLUSION CRITERIA

- a). Dentist had clinical experience >3 years.
- b). Male and female.
- c). Who are willing to give consent or participate for the study.

**EXCLUSION CRITERIA** -Dentists who refused to provide informed consent.

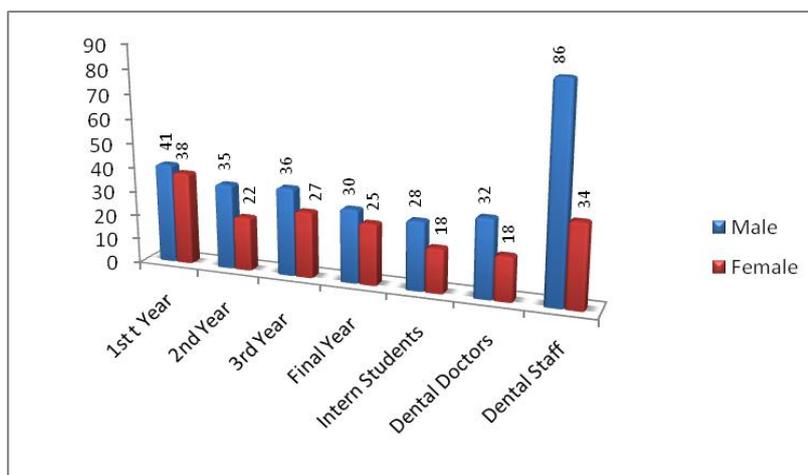
### RESULT

IN

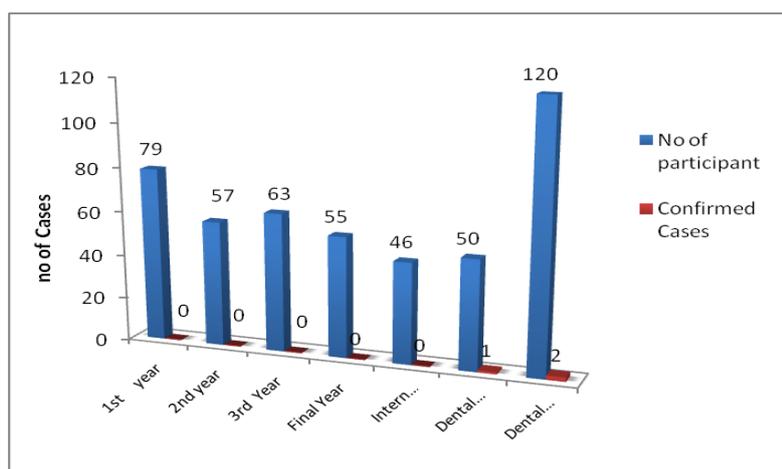


**Fig. Percentage of Total Male and Female participated in Study. 56% of the subjects are male while 44% of the subjects were female.**

	Male	Female	Total
<b>1<sup>st</sup> Year</b>	41	38	79
<b>2<sup>nd</sup> Year</b>	35	22	57
<b>3<sup>rd</sup> Year</b>	36	27	63
<b>Final Year</b>	30	25	55
<b>Intern Students</b>	28	18	46
<b>Dental Doctors</b>	32	18	50
<b>Dental Staff</b>	86	34	120



Male and Female Participants in each group of student. In the first year total subjects were 79 out of which 41 were male while 38 were female. In the 2<sup>nd</sup> year total 57 students were studied in which 35 were male and 22 were female. Out of 63 students in third year 36 were male and 27 were female. In final year 55 students were included out of which 30 are male and 25 were female. Among the intern students 28 students are male and 18 were female. Similarly 50 dental doctors were included in the study out of which 32 were male and rest 18 were female. 86 male dental staff and 34 female dental staff were also included in study.



	No of participant N (%)	Confirmed Cases N (%)	P value
<b>1<sup>st</sup> Year</b>	79 (100)	0 (0)	0.0413
<b>2<sup>nd</sup> Year</b>	57(100)	0 (0)	
<b>3<sup>rd</sup> Year</b>	63(100)	0 (0)	
<b>Final Year</b>	55(100)	0 (0)	
<b>Intern Students</b>	46(100)	0 (0)	
<b>Dental Doctors</b>	50 (100)	1 (2)	
<b>Dental Staff</b>	120 (100)	2 (1.6)	

No of participants and confirmed Hepatitis B cases in each group of study. In 1<sup>st</sup> Year 79 students were tested for hepatitis B but no students was found positive for the Hepatitis B. simillarly 57 2<sup>nd</sup> year, 63 3<sup>rd</sup> year, 55 final year and 46 intern students were screened for Hepatitis B but none of them were found positive for Hepatitis B. simillarly 50 dental doctors and 120 dental staff were also screened for Hepatitis B out of which 1 (2%) dental doctor and 2 (1%) dental staff were found positive for Hepatitis B. One way anova was performed to analyse the reults using Graph pad prism (version-5.0) software. (P<0.0413) which is statistically significant.

## DISCUSSION

HBV infection is the most important infectious occupational hazard in the dental profession. A number of reports suggest a significantly higher incidence of HBV among dental staff<sup>1</sup>(Assaya) Vectors of infection with HBV in dental practice are: blood, saliva and nasopharyngeal secretions.<sup>[7]</sup>

The use of general or selective screening of individuals for HBV coupled with passive immunoprophylaxis with immune globulin can decrease the transmission of HBV to the health worker but has not eliminated the problem. A vaccine to prevent hepatitis B, now licensed in the United States, should become a major factor in further control of HBV, particularly in health care deliverers.<sup>[4]</sup> This study was conducted on 470 participants out of which 56% were female and 44% were males.

Male and Female Participants in each group of stude. In the first year total subjects were 79 out of which 41 were male while 38 were female. In the 2<sup>nd</sup> year total 57 students were studied in which 35 were male and 22 were female. Out of 63 students in third year 36 were male and 27 were female. In final year 55 students were included out of which 30 are male and 25 were female. Among the intern students 28 students are male and 18 were female. Similarly 50 dental doctors were included in the study out of which 32 were male and rest 18 were female. 86 male dental staff and 34 female dental staff were also included in study.

No of participants and confirmed Hepatitis B cases in each group of study. In 1<sup>st</sup> Year 79 students were tested for hepatitis B but no students was found positive for the Hepatitis B. simillarly 57 2<sup>nd</sup> year, 63 3<sup>rd</sup> year, 55 final year and 46 intern students were screened for Hepatitis B but none of them were found positive for Hepatitis B. Similarly 50 dental doctors and 120 dental staff were also screened for Hepatitis B out of which 1 (2%) dental doctor

which was similar to a study conducted by Narasimhan et al<sup>[9]</sup> and Ungchusak K<sup>[10]</sup>, which stated that 2% and 0.7% of the dentists were hepatitis positive respectively this could be explained by the fact that there is increasing awareness among dentists about transmissible disorders and the fact that dentists take appropriate precautions while treating patients. 2 (1%) dental staff were found positive for Hepatitis B. which was contrary to the study conducted by Vadivale M<sup>[11]</sup> in which 24.8% of the staff was found to be positive for Hepatitis B this could be due to the fact that the study was conducted in 1989 when the workers were not aware of the risk and risk factors as compared to the present scenario when even the general public has become aware of diseases like hepatitis and AIDS and they take precautions to avoid being inflicted by such disorders. The result One way anova was performed to analyse the results using Graph pad prism (version-5.0) software. ( $P < 0.0413$ ) which is statistically significant.

## CONCLUSION

Merely celebrating World Hepatitis Day on 28 July is not sufficient for increasing awareness in the community. It is an opportunity for the people and health policy makers globally for more knowledge sharing and finding better approaches for control of HBV and HCV infections in their communities. The role of awareness and knowledge about modes of transmission in preventing spread of infection needs to be emphasized.<sup>[8]</sup> This study revealed that there was only a small number of dentist and dental staff who were Hepatitis positive where as none of the students were positive for hepatitis. This is indicative of the fact that there is increasing awareness about Hepatitis B and the fact that none of the students were infected with Hepatitis B is a positive indication that our younger generation is more cautious towards taking precautions against such infectious diseases. With the increasing knowledge and awareness against these infectious diseases, hopefully we would be able to successfully eradicate Hepatitis B in the years to come.

## REFERENCES

1. Assya Krasteval<sup>1</sup>, Vladimir E. Panov<sup>2</sup>, Maria Garova<sup>1</sup>, R. Velikova<sup>1</sup>, Angelina Kisselova<sup>1</sup>, Zahariy Krastev<sup>3</sup>, J of IMAB, Hepatitis B And C In Dentistry., 2008; 14(2).
2. Saniya Setia, Ramandeep Singh Gambhir, Vinod Kapoor Hepatitis B and C infection: Clinical implications in dental practice Year, 2013; 2(1): 13-19.

3. Dr. Faisal Solaiman et al, Preventive Practice on Hepatitis B Virus Infection among Dentists in Selected Hospitals at Dhaka City, Bangladesh City Dent. Coll. J January-2013; 10(1).
4. Charlotte AW, Steven YL, Samuel KS, et al. Hepatitis B and liver cancer Knowledge and preventive practices among Asian Americans in the San Francisco bay area, California. Asia Pacific J Cancer Prev., 2007; 8: 127-34.
5. Larry I. Lutwick The prevention of hepatitis B transmission in dental practice, Mdpediatric Dentistry, by The American Academy of Pedodontics, 1982; 4(4).
6. Parveen Dahiya, Reet Kamal, Varun Sharma and Saravpreet Kaur Department of Periodontics, Himachal Institute of Dental Sciences, Paonta Sahib, India Hepatitis” – Prevention and management in dental practice.
7. Mori M. Status of viral hepatitis in the world community: its incidence among dentists and other dental personnel. Int Dent J., Jun 1984; 34(2): 115-21.
8. Pallavi Lohani, Alok Kumar, Rashmi Singh\*, Ranjeet Kumar Sinha, Madhumita Mukherjee A study of risk factors of hepatitis B infection among rural adult Population of Patna, Bihar International Journal of Community Medicine and Public Health December, 2017; 4(12): 4654.
9. Narasimhan M, Hazarey V K, Varadarajan S. Prevalence of Hepatitis B surface antigen in dental personnel. J Oral Maxillofac Pathol, 2015; 19: 34-6.
10. Ungchusak K, Auewarakul P, Dowell SF, et al. Probable person-to-person transmission of avian influenza (H5N1). N Engl J Med, 2005; 352: 333-340.
11. Vadivale M, T C Tan TC, Ong CN. Sero-Prevalence Of Hepatitis B Infection Among Dental Professionals. Singapore Med J, 1992; 33: 367-369.