Study of Knowledge, Attitude, and Practices toward Hepatitis B and C Infections among Undergraduate Dental Students

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ABSTRACT

Introduction: Hepatitis is a silent epidemic. According to WHO estimate, two billion people in the world have serological evidence of prior HBV infection, and up to 3% (170 million) are infected with HCV. Dental professionals are at an increased risk of contracting this highly infectious disease due to the nature of their work. Study objective was to assess the knowledge, attitude and practices of second year BDS students about Hepatitis B and C infection.

Material and methods: A pre-tested, self-administered cross-sectional study including various aspects of Hepatitis B and C was conducted among the dental students who were attending the second year, of graduate program in Dental College and Hospital, Krishna Institute of Medical Sciences (Deemed to be University) Karad, Maharashtra.

Results: Study participants were between the ages of 18 yrs to 21 yrs. 72.2% were females. The response rate was 100%. Majority of the dental students were aware of the etiology of Hepatitis B (96.2%) and C infection (91.1%). Their knowledge about risk factors of Hepatitis B ranges between 31.6% to 93.7% and Hepatitis C was 40.5% to 86.1%. The 73.4% were vaccinated for Hepatitis B while 87.1% had correct knowledge about doses of Hepatitis B vaccination. But the knowledge about Hepatitis C post exposure prophylaxis was poor (1.3%)

Conclusion: The students had good knowledge regarding HBV infection and its preventive aspect. Discriminatory attitudes are common toward hepatitis C. It is therefore necessary to improve their knowledge level and attitude towards this disease.

Keywords: Knowledge, Practices, Hepatitis B virus, HBV, HCV, Vaccination, Dental Professionals

INTRODUCTION

There is increase in number of patients of hepatitis B and C infection, transmission of these infection is concern to dental professionals and to the patients1.Dentists are also may transmit these infections while treatment[2,3]. Due to people who are infected with hepatitis B and C and the HIV viruses, transmission of these infections among dental professionals and patients is major concern[2].

Hepatitis B virus (HBV) and Hepatitis C virus (HCV) are frequent causes of acute and chronic hepatitis worldwide and create a significant burden to healthcare systems due to the high morbidity and mortality and costs of treatment. Hepatitis B is a potentially life –threatening liver infection caused by the hepatitis B virus. Hepatitis B causes chronic liver infection having more than 240 million people having chronic infection. People with chronic hepatitis B infection leads to liver cirrhosis and liver malignancy. More than 780000 people die every year due to complication of hepatitis B including cirrhosis and liver cancer[4]. The hepatitis B surface antigen (HBsAg) carrier rate varies widely in different countries. In western and northern Europe, North America, and Australia it is less than 2%,in southern parts of Eastern and central Europe, the Amazon basin, the Middle East and the Indian subcontinent it is 2-7%, while general population ofSub Saharan African, East Asian and Alaska are having high HBsAg carriage > 8%[5].

Transmission of HBV is predominantly via parenteral means, even though this infection is also transmitted by sexual contact and acupuncture. Congenital or vertical transmission is quite common from carrier mothers. HBV infected neonates generally do not suffer from any clinical illness, but remain carriers for life and some of them may develop hepatocellular carcinoma after many decades. For neonates and infants who acquire HBV, the risk of chronicity is almost 90%, while it decreases to 30% for children 1-5yr, and up to 2% for older children and adults[6].

According to the WHO report on prevention of HBV in India[7], HBV carriers in India was estimated to be 5% on average, about 50 million that forms nearly 15% of the entire pool of HBV carriers in the world. In India prevalence among general population ranges from 0.1% to 11.7%, being between 2% to 8% in most studies[7]. In India HBsAg prevalence rate among blood donors ranged from 1% to 4.7%.

The studies done in western Maharashtra have reported seroprevalence of HBV and HCV 2.25% and 0.38% respectively[8,9].

Hepatitis C is the common cause of post transfusion hepatitis in developing countries. Hepatitis C was first detected in 1989 using molecular biology techniques after extensive testing of serum from experimentally infected animals[10]. Hepatitis C

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is classified under family Flaviviridae, genus *Hepacivirus*. It is reported that more than 350000 deaths from hepatitis C related liver diseases every year[11]. The studies of prevalence have been conducted in blood banks mostly[12]. Hepatitis C can present as acute or chronic hepatitis. Hepatitis C infection occurs worldwide. About 3% of the world population has been infected with HCV with more than 170 million chronic carriers. Higher prevalence rates have been documented from Africa followed by South America and Asia. About 25% people develop acute hepatitis and about 75-85% directly develops chronic disease[13]

As HBV and HCV infections can cause serious health problems and dentists are a high-risk group for HBV and HCV acquiring and transmission, we aimed to investigate knowledge, attitude and practices about hepatitis B and C in second year BDS students.

MATERIALS AND METHODS:

Study Population and Location

A cross-sectional study was conducted among the dental students who were attending the second year, of graduate program in Dental College and Hospital, Krishna Institute of Medical Sciences (Deemed to be University) Karad, Maharashtra.

Inclusion and Exclusion Criteria

Anonymity of participants was insured and their oral informed consent was obtained before completion of the questionnaire and after clear description of study objectives.

Questionnaire

A questionnaire was distributed among all the students of the study who were present at the day. This is a self-reported questionnaire; the questions in the questionnaire were designed to assess their basic knowledge, attitude, and practices toward hepatitis B and Hepatitis C infection.

STATISTICAL ANALYSIS

Data was collected and analysed by using statistical software SPSS version. Tabulation of data was done and frequencies and percentages were obtained.

RESULTS

In present study the knowledge, attitude and practice of second year dental students towards the hepatitis B and hepatitis C were investigated. Out of total 79, 2nd year dental students 57 (72.2%) were female and 22 (27.8%) were males (Fig.1). The mean age was 19.21 years (range: 18-21years).

Level of knowledge

Results revealed that 75(94.9%) responders have heard of hepatitis B while 83.5% have heard of hepatitis C. 96.2% and 91.1% know that hepatitis B and hepatitis C are caused by viruses respectively (fig 1,2).

Knowledge regarding risk factors

Table 2 shows knowledge regarding risk factors of hepatitis B and hepatitis C. Responders were having knowledge about risk factors of hepatitis B infected blood 93.7%, 75.9 knew about needle sharing, 64.6% about infected mother to child,

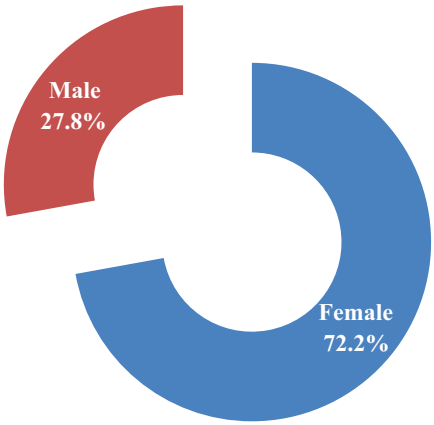

Figure-1: Sexwise distribution of study population

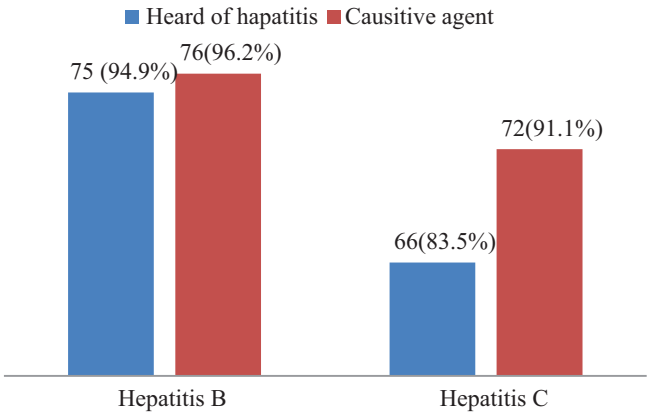

Figure-2: Awareness of hepatitis A and hepatitis C

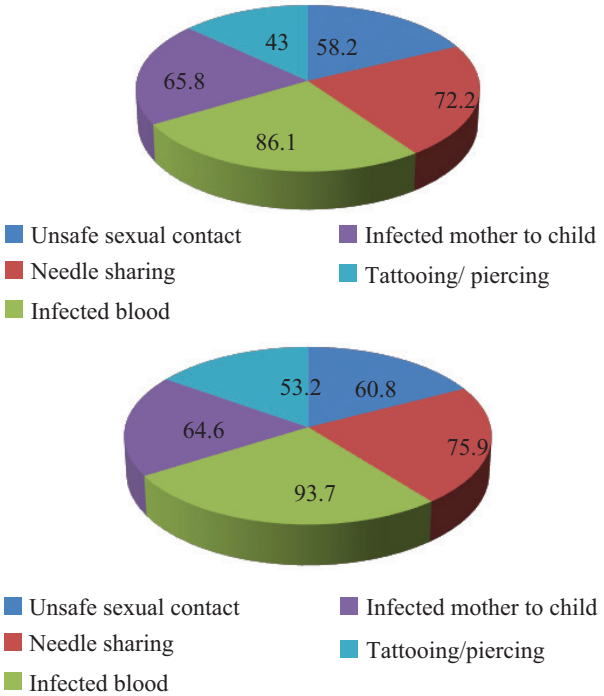

Figure-3: (A) Knowledge regarding risk factors of hepatitis C; (B) knowledge regarding risk factors of hepatitis B

60.8% about unsafe sexual contact and less knowledge about tattooing/ piercing was 53.2%. While about the hepatitis C, infected blood 86.1%, 72.2% knew about needle sharing, 65.8% about infected mother to child, 58.2% about unsafe

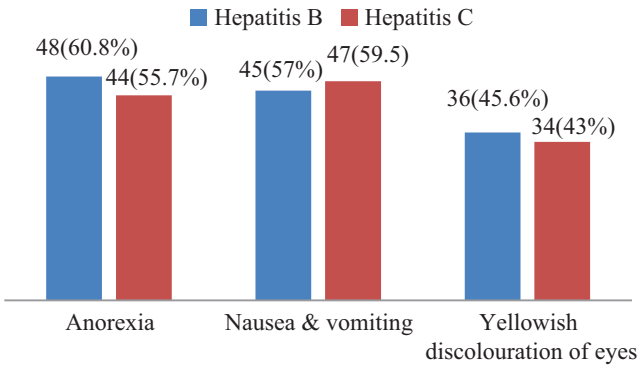

Figure-4: Knowledge of symptoms in study population

Age (Yrs)	Sex		Total (%)
	Female (%)	Male (%)	
18	8(10.1)	1(1.3)	9(11.4)
19	29(36.7)	12(15.2)	41(51.9)
20	18(22.8)	8(10.1)	26(32.9)
21	2(2.5)	1(1.3)	3(3.8)
Total	57(72.2)	22(27.8)	79(100)

Table-1: Age and sex distribution of study population

Risk factor	Knowledge about hepatitis B Yes N (%)	Knowledge about hepatitis C Yes N (%)
Unsafe sexual contact	48 (60.8)	46(58.2)
Needle sharing	60(75.9)	57(72.2)
Infected blood	74(93.7)	68(86.1)
Infected mother to child	51(64.6)	52(65.8)
Tattooing/ piercing	42(53.2)	34(43)

Table-2: Distribution of knowledge regarding risk factors of Hepatitis B and Hepatitis C

Risk group	Hepatitis B Yes (%)	Hepatitis C Yes (%)
Infected Blood receivers	58(73.4)	57(72.2)
Persons with multiple sexual partners	48(58.2)	45(57)
Health workers	43(54.4)	40(50.6)
Babies born with infected mothers	45(57)	39(49.4)
Surgeons	40(50.6)	31(39.2)
Barbers	29(36.7)	24(30.4)

Table-3: Distribution of knowledge regarding risk groups of Hepatitis B and Hepatitis C

sexual contact and less knowledge about tattooing/ piercing was 43%.

Knowledge about symptoms of Hepatitis B and C

Out of 79 dental students 48(60.8%) and 44 (55.7%) were knew anorexia is symptom of hepatitis B and C respectively. Nausea and vomiting has been told by 45(57%) and 47(59.5%) as well only 45.6% and 43% responders were knew about yellowish discoloration as symptom of hepatitis B and hepatitis C (figure-3,4).

Knowledge about risk groups of Hepatitis B and C

The risk groups tested were Infected Blood receivers, Persons with multiple sexual partners, Health workers, Babies born with infected mothers, Surgeons, Barbers. Knowledge about infected with hepatitis B and hepatitis C with these groups is shown in table no 3.

Attitude and practices about hepatitis B and hepatitis C vaccination

71(89.9%) were aware about Hepatitis B vaccine while 39(49.4%) were aware about non availability of Hepatitis C vaccine. 58(73.4%) were vaccinated for Hepatitis B 69(87.1%) had correct knowledge about doses of Hepatitis B vaccination. Knowledge of post exposure prophylaxis for hepatitis C, only one(1.3%) was aware and 38 (48.1%) had correct knowledge of hepatitis B can be prevented by vaccination.

DISCUSSION

Our present study evaluates the level of knowledge, attitude and practice of Dental Medicine students about hepatitis B and C infections. In our study awareness of hepatitis B was 75(94.9%) and knowledge about causative agent of Hepatitis B was 76(96.2%) which is very well comparable with study of Nagpal et al[14] (97.7%) and 90.6% by Padharbale et al[15].

In study knowledge about risk factors of hepatitis B infected blood 93.7%, 75.9 knew about needle sharing, 64.6% about infected mother to child, 60.8% about unsafe sexual contact and less knowledge about tattooing/ piercing was 53.2%. While about risk factor of transmission of the hepatitis C 86.1% knew infected blood as risk factor, 72.2% reported needle sharing, 65.8% have knowledge about infected mother to child as risk factor, 58.2% knew about unsafe sexual contact. Only 43% participant had tattooing/ piercing as risk factor for Hepatitis C. The majority of participants in our study showed high or average rate of knowledge concerning HBV and HCV route of transmission. Similar results were found in previous studies assessing HBV knowledge in dental students and dentists' worldwide[16-18]. In another study backward Multivariate logistic regression model analysis revealed increasing age; alcoholic, blood transfusion and dialysis were significantly associated with HCV positivity[19]. Using MLR model, we can identify patients who are at risk of HCV infection.

Our study shows 71(89.9%) were aware about Hepatitis B vaccine while 39(49.4%) were aware about non availability of Hepatitis C vaccine. 58(73.4%) were vaccinated for Hepatitis B 69(87.1%) had correct knowledge about doses of Hepatitis B vaccination. Correct Knowledge about post exposure prophylaxis for Hepatitis C was present in 1(1.3%) student. Only 38(48.1%) have correctly said that hepatitis B can be prevented by vaccination. Knowledge about anti-Hep B vaccination schedule was found to be 71(89.9%) which is like with the study of Sain et al[20] (94%). When asked about their vaccination status, 69 (87.1%) subjects from our study stated that they were vaccinated as compared to the 23.7% reported by Bansal et al[21] and 62% by Gayathri et al[22] in India. Knowledge of post exposure prophylaxis for hepatitis C, only one student (1.3%) was aware. Similar findings have been reported by Sharma et al[23].

The study conducted by Tripati S et al[24] demonstrated the

need for further education and awareness among dental professionals. Dental students should have knowledge and gravity of Hepatitis C disease and no vaccine is available for Hepatitis C infection.

Dental students in this study have a good level of knowledge and positive attitudes about infection control. However, the knowledge acquired must be transferred into daily practice. With all infection control protocols already implemented in dental schools, improving compliance with infection control recommendations remains a challenge.

CONCLUSION

The students had good knowledge regarding HBV infection and its preventive aspect. There is less awareness and knowledge about Hepatitis C infection and there is need for further HCV education and awareness among dental students.

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