# **Original Research Article**

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# Knowledge, attitude and practice regarding hepatitis B among medical students

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#### **ABSTRACT**

**Background:** Hepatitis means inflammation of the liver cells. Main cause of hepatitis is viral infection by hepatitis B virus. Hepatitis B is a serious, global, public health problem that gives rise to hepatocellular carcinoma with a mortality rate of about 600000 people worldwide. Medical students are also vulnerable to acquire this infection.

**Methods:** A cross-sectional study aimed to evaluate knowledge, attitude and practice regarding spread, risk factors, diagnosis and treatment of Hepatitis B was undertaken amongst 341 undergraduate medical students using a standardized questionnaire. In addition to this awareness regarding post exposure prophylaxis and vaccination status of hepatitis B among the students were also studied.

**Results:** In the present study 98.8% of medical students had correct knowledge regarding vaccine for hepatitis B. Study showed good knowledge regarding spread and risk factors for hepatitis B. 98.5% of the students gave the correct answer that hepatitis B is diagnosed by hepatitis markers test. Regarding treatment, 98.2% said that vaccination is the choice for treatment of hepatitis B. With respect to post exposure prophylaxis 97.1% said that vaccination is main source of post exposure prophylaxis and 91.8% said that HBIg is used for post exposure prophylaxis. Regarding the vaccination status of students for hepatitis B, 26.7% were fully vaccinated and 36.4 % were partially vaccinated and 37% were unvaccinated.

**Conclusions:** This study showed that knowledge and attitude of medical students are good towards hepatitis B but practice is not sufficient as  $1/3^{rd}$  of students are unvaccinated.

Keywords: Hepatitis B, Medical students, Knowledge, Attitude and practice

#### INTRODUCTION

Hepatitis B is an infection of the liver caused by the hepatitis B virus (HBV). It is estimated that 2 billion people worldwide have current or past hepatitis B infection, including more than 250 million chronic carriers and more than 600,000 deaths worldwide each year. Hepatitis B is widespread in the Asia Pacific region and 10 to 15 million of the population suffer from this disease. Since India has one-fifth of the world's population, it accounts for a large proportion of global

burden of HBV. India harbors 10-15% of the entire pool of HBV carriers of the world.<sup>3</sup> The average estimated carrier rate of hepatitis B virus (HBV) in India is 4%, with a total pool of approximately 36 million carriers. Professional blood donors constitute the major high risk group for HBV infection in India, with a hepatitis B surface antigen positivity rate of 14%. Blood transfusions represent the most important route of HBV transmission among adults. However, most of India's carrier pool is established in early childhood, predominantly by horizontal spread due to crowded living conditions and

poor hygiene.<sup>4</sup> The risk of occupational infections in such developing countries is intensified by a variety of factors comprising but not restricted to overcrowding in hospitals, lower Health Care Worker: patient ratios, insufficient or absence of basic safety and protection equipment, partial awareness of exposure risk of blood and body fluid, and reutilizing/reprocessing contaminated needles and sharp instruments.<sup>5</sup> A safe and effective vaccine against HBV is available since 20 years and is effective in preventing infection and the serious consequence of hepatitis including liver cancer and cirrhosis when given before or after exposure.<sup>6</sup>

Health workers, especially physicians and medical students are always in direct contact with patients and are vulnerable to the acquisition of these infectious diseases. They are involved in blood transfusion, injections and surgical operations in their practices. They should be aware of the risk involved and should take appropriate precautions in dealing with patients. Hence present study was conducted to assess the knowledge, attitude and practice among the future doctors i.e. medical students.

#### **METHODS**

A cross sectional study was carried out among 341 undergraduate medical students of Deccan College of Medical Sciences, Hyderabad during July-August 2016. Students from 2<sup>nd</sup> year to interns were included as study population. First year students were not included as they were busy in university examination. Study was approved by ethical committee of institution. Students were approached in lecture halls and informed consent was taken. Study and confidentiality aspects were explained to the students. A pre-formed, pre-tested questionnaire was distributed which was collected after it had been completed. Data were collected regarding knowledge, attitude and practice of hepatitis B. In addition, it also contained vaccination status and awareness of students regarding post exposure prophylaxis of hepatitis B. Data was entered in excel and analyzed by SPSS version 11.

### **RESULTS**

The study was conducted among 341 MBBS students of a medical college. 27.9% students were in second year, 26.7% were in final year part-1 (third year), 21.7% were in final year part 2 (fourth year) and 23.8% were interns. In this 32.8% were male and 67.2% were female (Table 1). In the present study 98.8% of medical students had correct knowledge that vaccine for hepatitis B is available. Regarding spread of hepatitis B, 98.8% said that hepatitis B spreads by blood, 94.4% said that is spreads by sexual contact and only 5.6% said that hepatitis B spreads by food thus showing good knowledge regarding the spread of hepatitis B. With respect to risk factors 95.9% said that shared needle is a risk factor for hepatitis B, 97.4% said that unprotected sexual contact is a risk factor and 94.4 % said that living with hepatitis b patient is not a risk factor for hepatitis B.

**Table 1: Characteristics of study participants.** 

		Frequency	Percent
	19	14	4.1
	20	136	39.9
<b>A</b>	21	34	10.0
Age	22	77	22.6
(completed years)	23	71	20.8
ycars)	24	7	2.1
	25	2	0.6
	Total	341	100.0
Sex	Male	112	32.8
	Female	229	67.2
	Total	341	100.0
	Second year	95	27.9
Voor of	Final part-1	91	26.7
Year of study	Final part-2	74	21.7
	Interns	81	23.8
	Total	341	100.0

This showed good knowledge regarding risk factors for hepatitis B among the students (Table 2). Assessing the knowledge about diagnosis and treatment for hepatitis B, 98.5% of the students gave the correct answer that hepatitis B is diagnosed by hepatitis markers test. 88% also gave a correct answer that diagnosis cannot be made from medical history and 92.1% said that diagnosis cannot be made from Elisa test.

Table 2: Knowledge regarding spread and risk factors of hepatitis B.

Knowledge	Desired response	Correct response	Incorrect response
Is vaccine available for hepatitis B	Yes	337 (98.8)	
Spread of hepatitis B is by blood Spread of hepatitis	Yes	337 (98.8)	4 (1.2)
B is by sexual contact	Yes	322 (94.4)	19 (5.6)
Spread of hepatitis B is by food	No	322 (94.4)	19 (5.6)
Risk factor for hepatitis B is shared needle	Yes	327 (95.9)	14 (4 1)
Risk factor for hepatitis B is	168	321 (93.9)	14 (4.1)
unprotected sexual contact	Yes	332 (97.4)	9 (2.6)
Risk factor for hepatitis B is living with	No	322 (94.4)	19 (5.6)
hepatitis B patient			

Regarding treatment, 98.2% said that vaccination is the choice for treatment of hepatitis B and 82.4% said that

immunotherapy (Hepatitis B Ig) can be used for treatment of hepatitis B. 86.8% students said that anti-viral cannot be used to treat hepatitis B infection (Table 3).

Table 3: Knowledge regarding diagnosis and treatment of hepatitis B.

Knowledge	Desired response	Correct response	Incorrect response
Diagnosis of hepatitis B is by medical history	No	300 (88)	41(12)
Diagnosis of hepatitis B is by hepatitis markers test	Yes	336 (98.5)	5 (1.5)
Diagnosis of hepatitis B is by ELISA test	No	314 (92.1)	27 (7.9)
Treatment for hepatitis B is antiviral therapy	No	296 (86.8)	45 (13.2)
Treatment for hepatitis B is immunotherapy	Yes	281 (82.4)	60 (17.6)
Treatment for hepatitis B is vaccination	Yes	335 (98.2)	6 (1.8)

Table 4: Knowledge regarding post exposure prophylaxis and prevention of hepatitis B.

Knowledge	Desired response	Correct response	Incorrect response
Post exposure prophylaxis for hepatitis B is by vaccination	Yes	331 (97.1)	10 (2.9)
Post exposure prophylaxis for hepatitis B is by HBIG	Yes	313 (91.8)	28 (8.2)
Post exposure prophylaxis for hepatitis B is by anti-viral	No	301 (88.3)	40 (11.7)
Prevention of hepatitis B is by screened blood transfusion	Yes	334 (97.9)	7 (2.1)
Prevention of hepatitis B is by	Yes	339 (99.4)	2 (0.6)
vaccinations Prevention of hepatitis B is by hygiene	No	273 (80.1)	68 (19.9)

With respect to post exposure prophylaxis, 97.1% said that vaccination is main source of post exposure prophylaxis and 91.8% said that HBIg is used for post

exposure prophylaxis. 88.3% correctly said that anti-viral is not used for post exposure prophylaxis. With regards to knowledge about prevention 97.9% said that hepatitis B can be prevented by doing screened blood transfusions and 99.4% said that vaccination should be done to prevent hepatitis B. Only 19.9% said that hygiene is also required to prevent hepatitis B (Table 4).

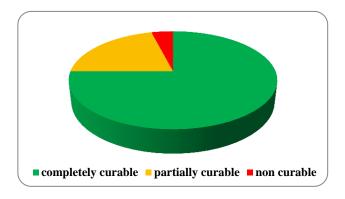


Figure 1: Knowledge regarding curability of hepatitis B.

Table 5: Attitude regarding hepatitis B.

Knowledge	Desired response	Correct response	Incorrect response
Should hepatitis B patients be allowed to work	Yes	314 (92.1)	27 (7.9)
Should hepatitis B patients be allowed to exercise	Yes	303 (88.9)	38 (11.1)
Should hepatitis B patients be allowed to have unprotected sex	No	333 (97.7)	8 (2.3)
Should hepatitis B patients be isolated	No	330 (96.8)	11 (3.2)
Should hepatitis B patients be hospitalized for full duration of treatment	No	325 (95.3)	16 (4.7)
Should patients affected with hepatitis C be vaccinated for hepatitis B	Yes	336(98.5)	5(1.5)
Should newborns born to affected mothers be vaccinated	Yes	341 (100)	0 (0)

For curability of hepatitis B, 75 % of the students said that hepatitis B is completely curable while 21% said that

hepatitis is partially curable and 4% of the students said that hepatitis B is non-curable at all (Figure 1).

Regarding the attitude among the students towards hepatitis B, 92% believed that hepatitis B patients should be allowed to work and 88.9% said that they should be allowed to exercise. 97.7% agreed that hepatitis B patients should not be allowed to have sexual contact and 96.8% said they should not be isolated. 95.3% of the students agreed that there is no need for hospitalization of hepatitis B patients for the full duration of treatment. 98.5% of the students gave the correct answer that patients suffering from hepatitis C should be vaccinated

for hepatitis B also. 100% of the students also agreed that newborns born to hepatitis B affected mothers should be vaccinated (Table 5).

Regarding the vaccination status of students for hepatitis B, 26.7% were fully vaccinated and 36.4% were partially vaccinated and 37% were unvaccinated. Among 3<sup>rd</sup> year students, 78% were fully vaccinated while among 2<sup>nd</sup> year, 4<sup>th</sup> year and interns on 7.4%, 6.8% and 9.9% were fully vaccinated respectively (Table 6). With respect to needle injury, 7% of students had previous needle injury. Needle injury is maximum among 3<sup>rd</sup> year (8.8%) and 4<sup>th</sup> year (10.8%) students (Table 7).

Table 6: Vaccination status among study participants.

Year of study	Vaccination status	Vaccination status		
	Fully vaccinated	Partially vaccinated	Unvaccinated	Total
Second year	7 (7.4%)	59 (62.1%)	29 (30.5%)	95 (100%)
Third year	71 (78%)	2 (2.2)	18 (19.8)	91 (100%)
Fourth year	5 (6.8%)	15 (20.3%)	54 (73%)	74 (100%)
Interns	8 (9.9%)	48 (59.3%)	25 (30.9%)	81 (100%)
Total	91 (26.7%)	124 (36.4%)	126 (37%)	341 (100%)

Chi Sq=221.33, DF=6, P=0.000

Table 7: Needle injury among study participants.

Year of	Needle Inju	Total	
study	Yes	No	Total
Second year	4 (4.2%)	91 (95.8%)	95 (100%)
Third Year	8 (8.8%)	83 (91.2%)	91 (100%)
Fourth Year	8 (10.8%)	66 (89.2%)	74 (100%)
Interns	4 (4.9%)	77 (95.1%)	81 (100%)
Total	24 (7%)	317 (93%)	341 (100%)

Chi Sq= 3.74, DF=3, P=0.29

#### **DISCUSSION**

This was a study conducted among 341 medical students of Deccan College of medical sciences. In the present study 98.8% said hepatitis B is transmitted by blood and 94.4% said it is transmitted by sexual contact. Similar findings have been reported among studies conducted among medical students of northwest Ethiopia, Karachi and Ahmedabad. 9,10 95.9% of students said that shared needles and unprotected sexual contacts are a risk factor for hepatitis B.8 Similar findings were given by WHO.11 98.8% of students were aware about the availability of hepatitis B vaccination. This was similar to study conducted among health care workers by S Setia 75.1% said that hepatitis B was curable. 12 Similar results were obtained in a study conducted in Rajasthan by Baig VN 99.4 % students said that vaccination can prevent hepatitis B infection. 13 This is similar to a study conducted by Satekge, M. M. 97.1% said that screened blood transfusions can prevent transmission of hepatitis B.14 This was similar to study conducted among medical students in Rawalpindi by Raza W 98.5% said that diagnosis of hepatitis B is by markers test (HBsAg). 15 This was similar to the guidelines given by WHO regarding hepatitis B. 16 100% students gave the correct answer that newborns born to infected mothers should be vaccinated to prevent perinatal transmission of infection. Similar guidelines had been provided by WHO in 2015. 18 98.5% of the students gave the correct answer that patients with hepatitis C should be vaccinated for hepatitis B to prevent co-infection. This was in accordance to guidelines provided by WHO.19 In conclusion it was found that the knowledge and attitude of medical students were good towards hepatitis B but practice was not sufficient as 1/3<sup>rd</sup> of students were unvaccinated.

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Ethical approval: The study was approved by the

Institutional Ethics Committee

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