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## Knowledge and awareness in managing hepatitis b patients among dental students

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### Abstract

The aim of this study is to evaluate the knowledge and awareness in managing hepatitis B patients among dental students. It is a cross sectional study. Around 150 subjects were selected for the study. The subjects were asked to answer 25 multiple choice questions. Comparative graphs are made based upon the results obtained. These groups helps in evaluating the knowledge in managing hepatitis B patients. This study shows a overall level of knowledge is fairly good. This study also reflects the need of advising screening and diagnostic tests for dental students and HBV.

**Keywords:** Hepatitis B, awareness, vaccination, treatment modalities, dental students

### 1. Introduction

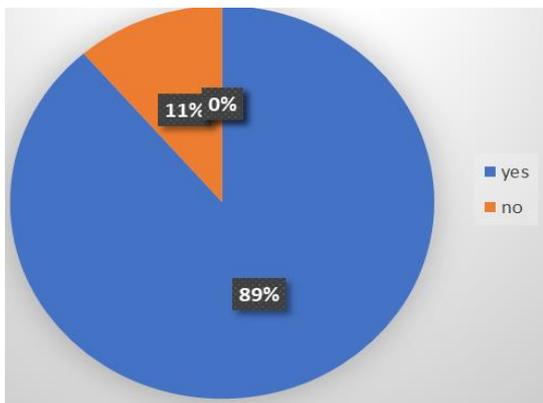
Hepatitis B is an occupational health hazard to dental health care professionals [1]. To be more specific, oral surgeons and periodontists are at a maximum risk of these infection since there is a constant exposure to various blood borne and upper respiratory pathogens through blood, saliva and various other body fluids [1, 2]. It can be transmitted from patient to dental health care professionals and vice versa. Hepatitis B infection is a disease of the liver caused by hepatitis B virus (HBV), which has a double stranded circular DNA and belongs to the family hepadnaviridae [3]. It is a major public health concern worldwide [8]. Hepatitis B virus are transmitted by pricks with infected, contaminated needles and syringes or through accidental inoculation of minute quantities of blood during surgical and dental procedures [3, 4]. Intra orally greatest concentration of hepatitis B infection is the gingival sulcus. In addition, periodontal disease, severity of bleeding and bad oral hygiene were associated with the risk of hepatitis B. Manifestation in oral cavity include lichen planus, Sjogren syndrome and sialadenitis, Some form of oral cancers may also be seen [5]. In patients with hepatitis B, impaired haemostasis can be manifested in the mouth as petechias or excessive gingival bleeding with minor trauma [8]. The prevalence of Oral lichen planus and pitted keratolysis in the hbs antigen carrier group has been found to be significantly high [14]. The most frequent and important problems associated with hepatitis B in dental setting include the risk of infection, risk of bleeding in patients and alteration in metabolism of certain drug substances that increases the risk of toxicity [7]. In these patients before any invasive procedure complete hemogram inclusive of INR should be performed. Surgeries should be performed under proper antibiotic protocol. The administration of analgesics, antibiotics should be used cautiously [6, 7]. Hepatitis B is a disease of concern and the management of a patient infected with it can be difficult and challenging. It can be prevented by strict adherence to standard microbiological practices and routine use of appropriate barrier precautions and it is mandatory for all health care professionals to get vaccinated against hepatitis B [8]. In India, hepatitis B vaccine was launched in 2003 along with a birth dose within 24h which was expanded to the whole country in 2008 [5]. Complete vaccination confers immunity for at least 20 years. Most of the Indian subcontinent population born before 2008 have not received hepatitis B vaccination except few who might have availed it from the private sector [9]. Even after the introduction of many programs and strategies, hepatitis infection continues to remain a major health problem in dental settings [2, 3, 6].

### 2. Materials and method

A cross sectional study was conducted among the Post Graduates, Interns and Final year students of Thai Moogambigai Dental College and Hospital.

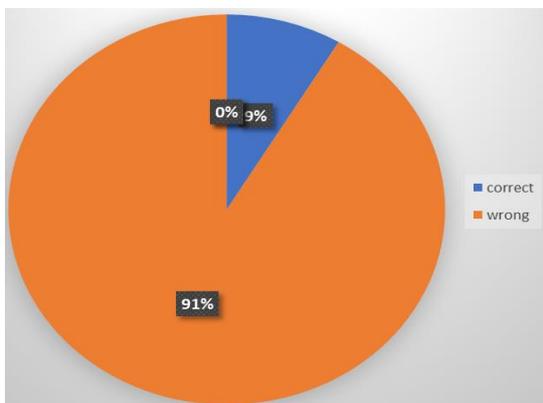
150 participants were enrolled in the study. The subjects were briefed about the study and informed consent was obtained from them. Ethical committee approval was obtained from the university. All students in the study completed a paper based questionnaire consists of 25 closed ended questions. First part of the questionnaire consists of demographic details of the subject, their academic year and specialization (if any). The information obtained during the data collection were kept confidential. The questions in the questionnaire were designed to assess their knowledge.

**3. Results**



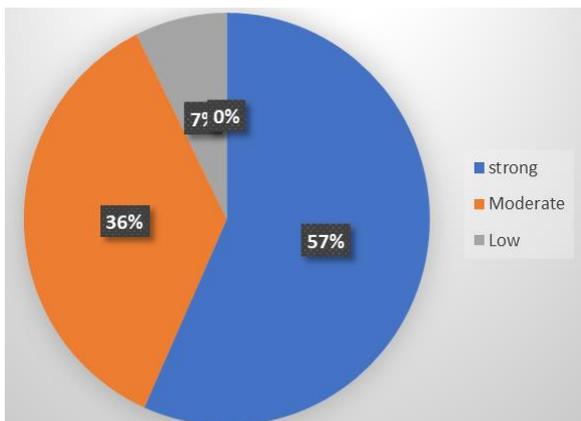
**Chart 1:** Did you get vaccinated against hepatitis?

89% got vaccinated against hepatitis and rest 11% didn't get vaccinated.



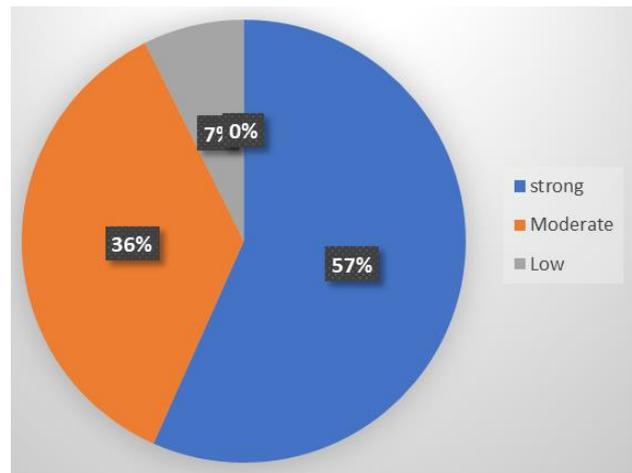
**Chart 2:** What is the protocol for hepatitis B vaccine?

81% of dental students are aware of the correct protocol for hepatitis B vaccine.



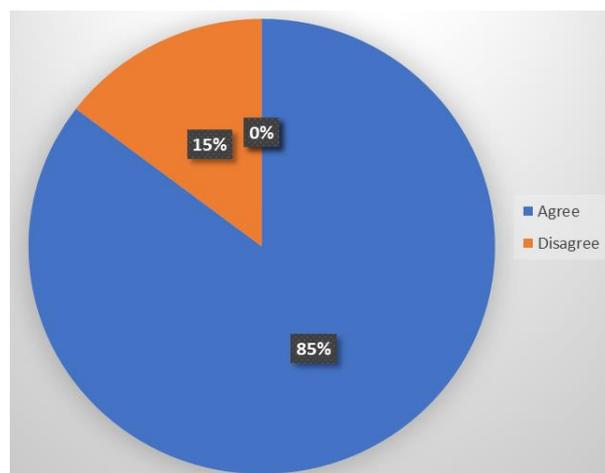
**Chart 3:** How long does hepatitis B vaccine lasts in the body?

Only 9% of students are aware of the correct answer. Hepatitis B vaccine last for about 20 years.



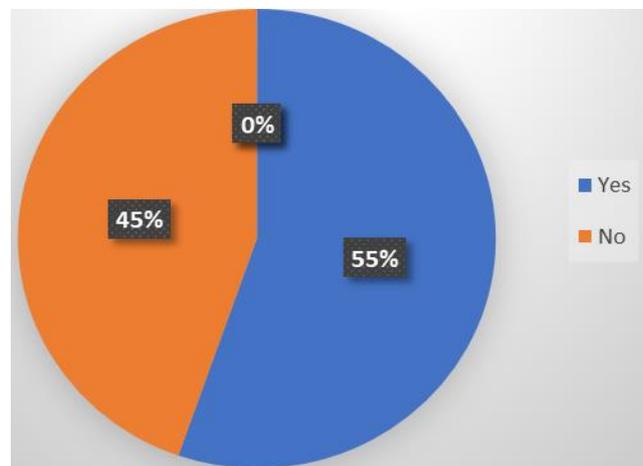
**Chart 4:** How strong is your personal worries about the risk of being infected by hepatitis B?

57% of students have a strong personal worry about the risk of being infected with hepatitis B. 36% of students have a moderate personal worries and rest 11% have low worries about the risk of being infected with hepatitis B.



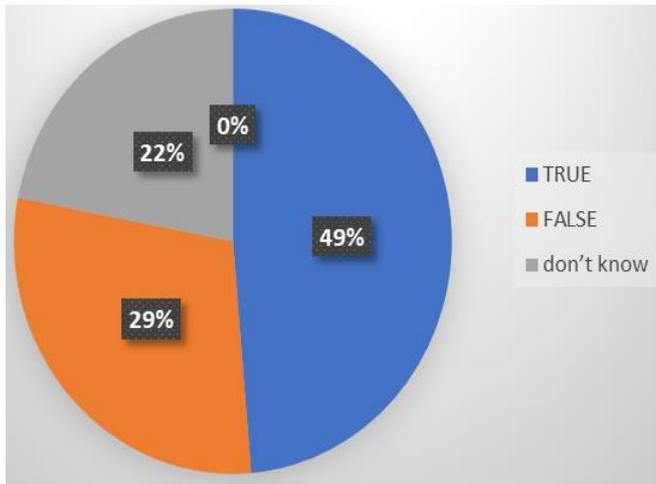
**Chart 5:** Do you think that hepatitis B patients should be treated separately in clinics?

85% of dental professionals agree that hepatitis B patients should be treated separately in clinics.



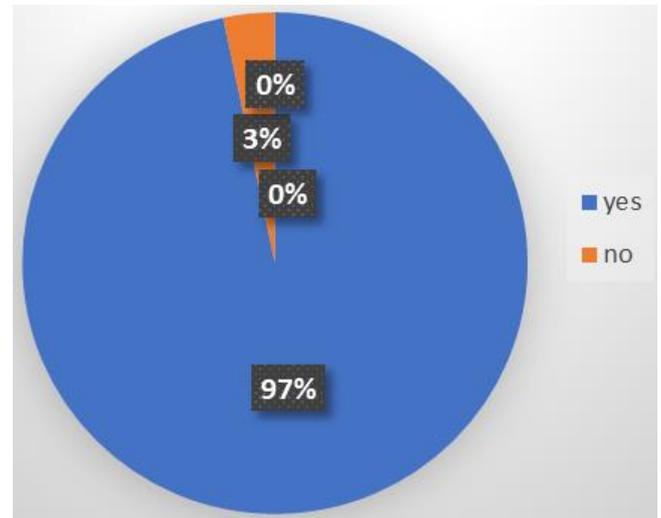
**Chart 6:** Have you ever treated a hepatitis B positive patient knowingly?

55% of students have treated hepatitis B patients knowingly.



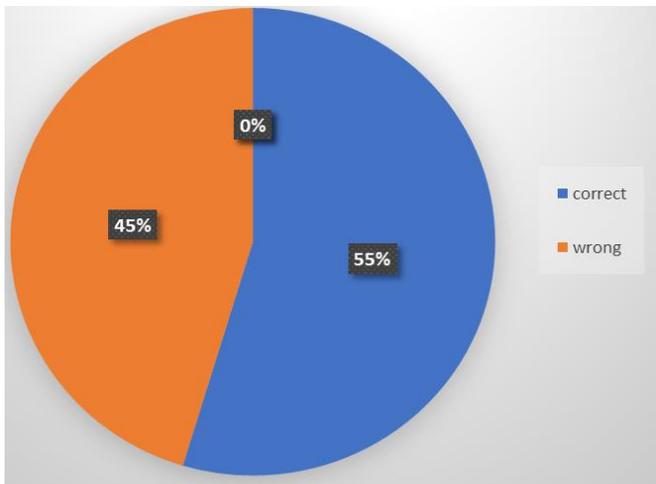
**Chart 7:** Do you think HBV is also highly infectious and widely transmitted as HIV?

HBV is also highly infectious and widely transmitted as HIV 49% responded correctly



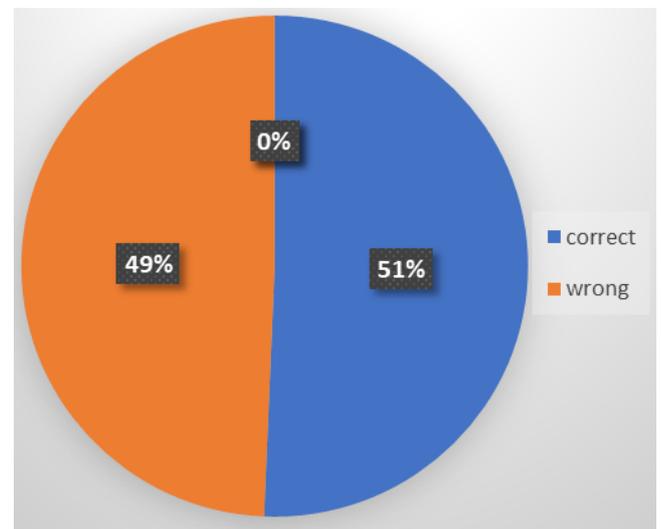
**Chart 10:** Do you think hepatitis B virus may be transmitted by needle pricks?

Hepatitis virus is transmitted by needle pricks. 97% responded correctly.



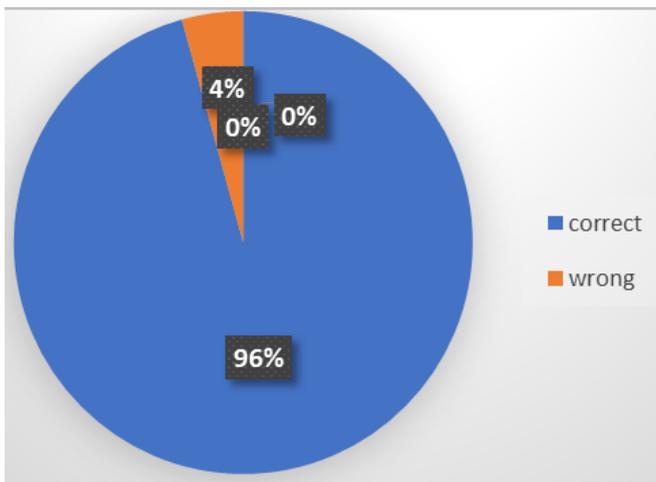
**Chart 8:** Main indicator of active infection is?

Main indicator for active infection is hbs. 55% responded correctly.



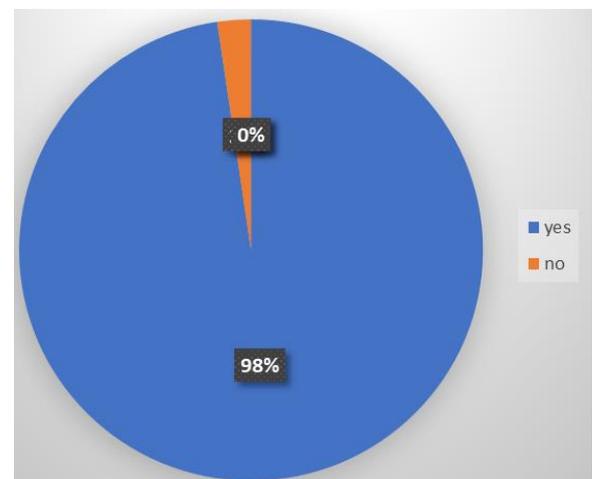
**Chart 11:** Which of the following route is at higher risk for spread of hepatitis?

Only 51% responded correctly, blood route is at high risk for spread of hepatitis.



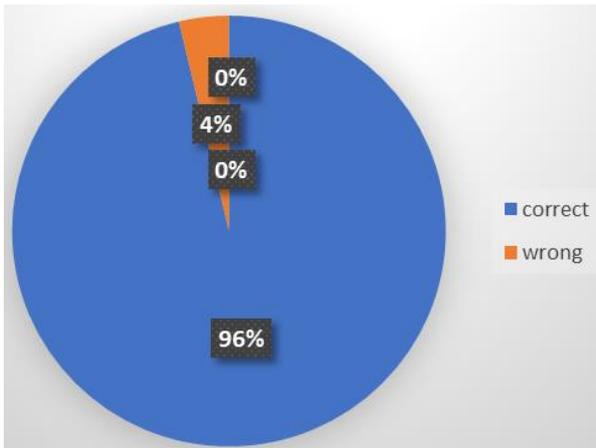
**Chart 9:** Which of these antibodies shows immunity to hepatitis B?

Anti hbs antibodies shows immunity to hepatitis B. 96% responded correctly



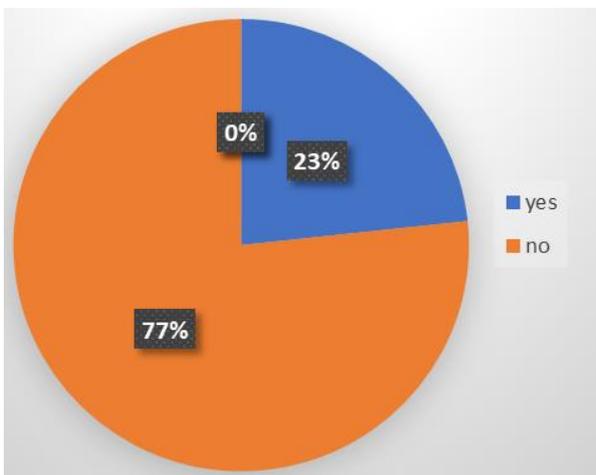
**Chart 12:** Do you follow universal precautions against hepatitis B while treating patients?

98% of students follow universal precautions against hepatitis B while treating patients.



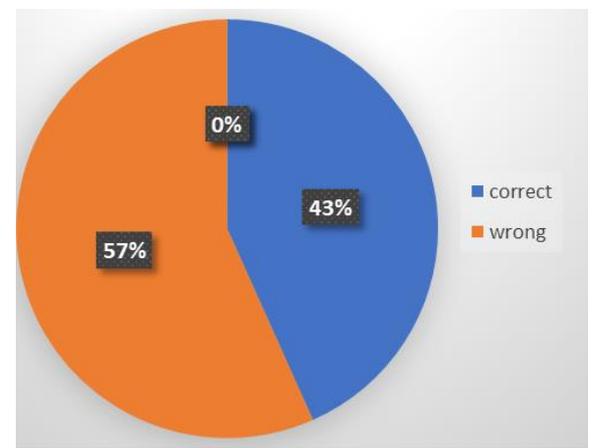
**Chart 13:** Do you follow universal precautions against hepatitis B while treating patients?

96% use double gloves, double masks and face shield to protect themselves while treating patients.



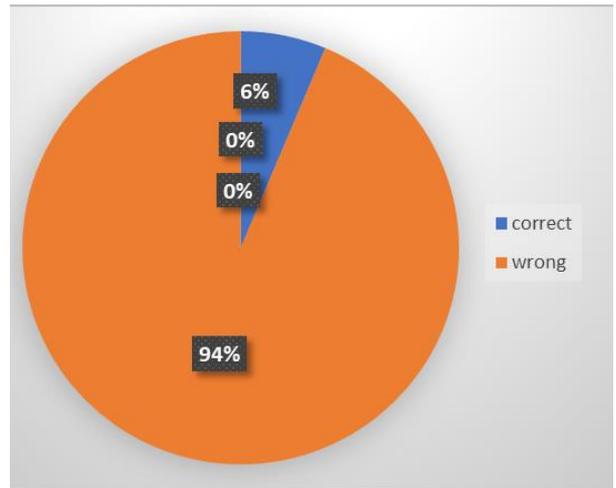
**Chart 14:** Do you think that the precautions you have adopted are enough to protect yourself from being infected by hepatitis during work?

Only 23% believe that the precautions they have adopted are enough to protect themselves from being infected by hepatitis during work.



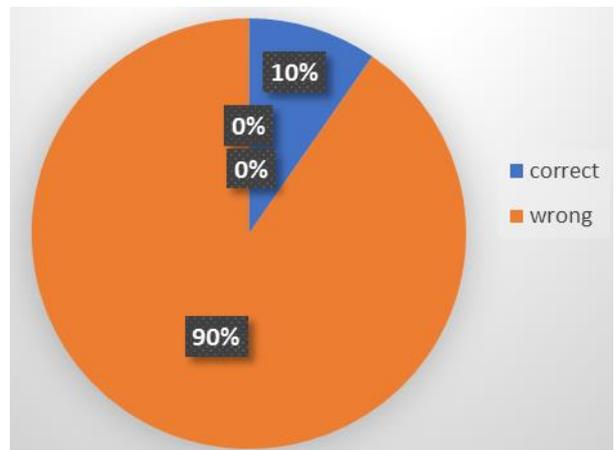
**Chart 15:** Intra orally greatest concentration of hepatitis B infection is seen in?

Intra orally greatest concentration is seen in gingival sulcus. only 43% responded correctly.



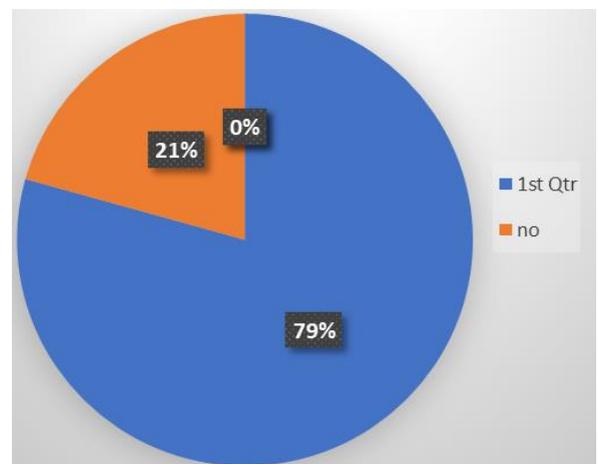
**Chart 16:** Prominent clinical feature of hepatitis?

There are no prominent symptoms in 98 % cases. Only 6% responded correctly.



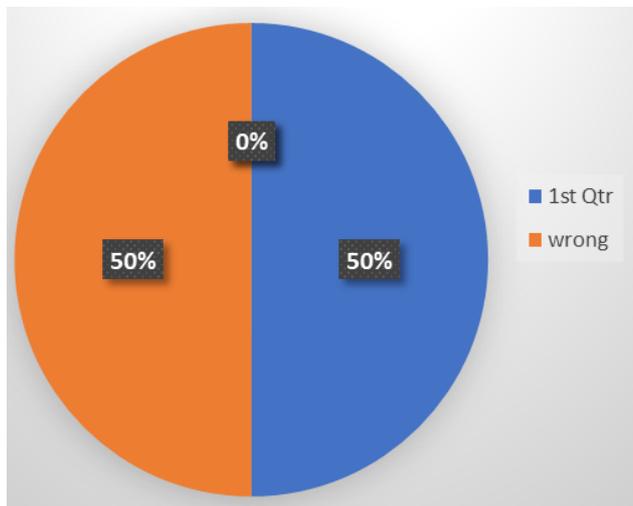
**Chart 17:** Which among the following lesion is most commonly associated with hepatitis?

Oral lichen planus lesion is most commonly associated with hepatitis B. only 10% responded correctly.



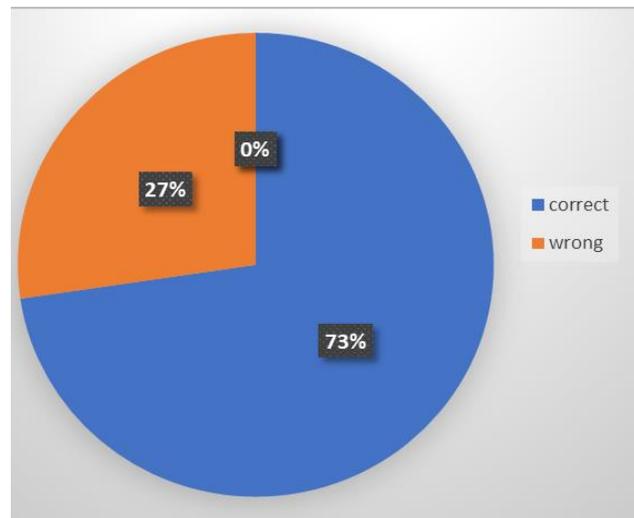
**Chart 18:** Do you think use of local anesthesia is safe in hepatitis B patient?

Use of local anaesthesia is safe in hepatitis B patient. 79% responded correctly.



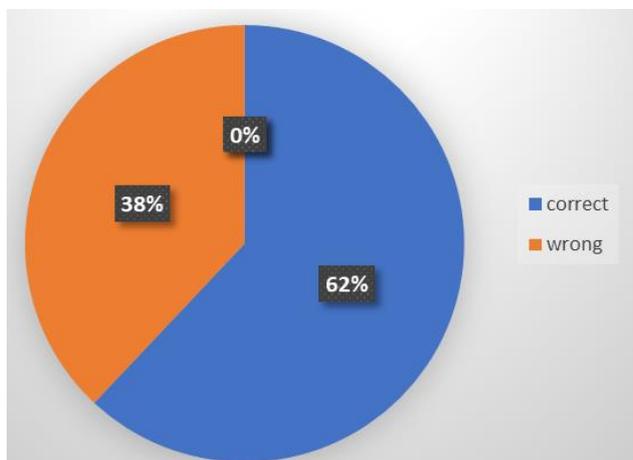
**Chart 19:** What is the total dosage recommended?

Total dosage of local anaesthesia recommended in hepatitis patient is <7mg/kg body weight. 50% responded correctly.



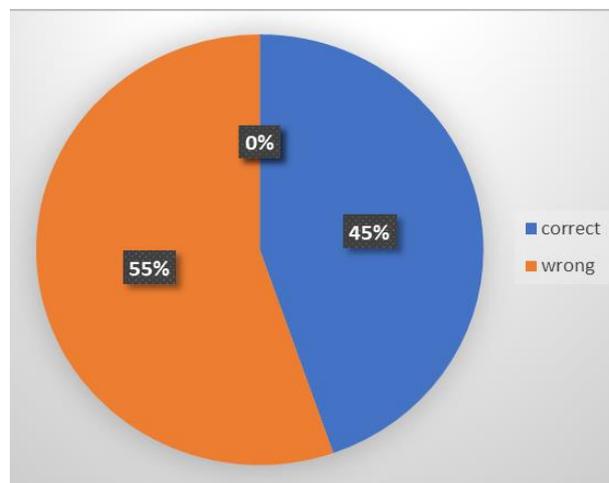
**Chart 22:** What is INR?

INR-International Normalized Ratio. 73% responded correctly.



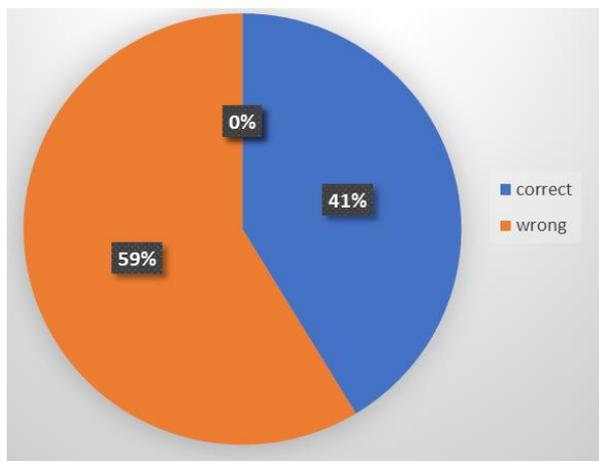
**Chart 20:** Which of the following antibiotics should be avoided in hepatitis B patients?

Antibiotics-aminoglycosides should be avoided in hepatitis B patients. Only 62% responded correctly.



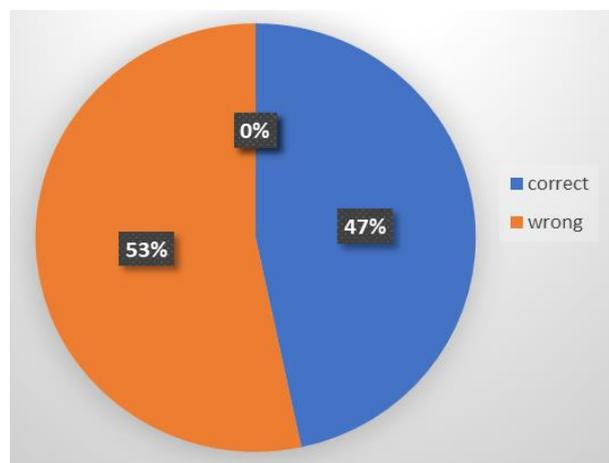
**Chart 23:** Normal INR level to perform a surgery in hepatitis patients?

Normal INR level to perform a surgery in hepatitis B patients is less than 3.5. only 45% responded correctly.



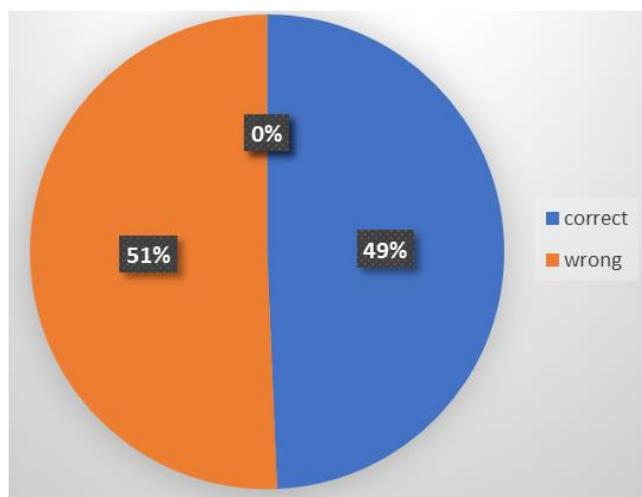
**Chart 21:** Which of the following analgesics should be avoided in hepatitis B Patients?

Analgesics- tramadol should be avoided in hepatitis B patients. only 41% responded correctly.



**Chart 24:** What are the complications you will come across on treating a patient with hepatitis?

Complications on treating a patient with hepatitis are profuse bleeding and increase toxic reaction of the drug. only 47% responded correctly.



**Chart 25:** In case of accidental exposure to hepatitis B, the recommendation time limit for vaccination is?

In case of accidental exposure to hepatitis B, the recommendation time limit for vaccination is within a week.

#### 4. Discussion

The current study was sought to document the knowledge towards managing hepatitis patient. The overall level of knowledge is fairly good. A thorough clinical evaluation and obtaining detailed history is one of the important aspects to prevent complications<sup>[4, 5]</sup>. However students did not have sufficient knowledge of some infections, and the management to deal with them. This could be due to lack of exposure to such patients during their career<sup>[1, 2]</sup>. Therefore, with this idea, we tried to evaluate the knowledge and awareness of managing hepatitis B patients. It is recommended that a policy be implemented for complete vaccination and health education for all dental students<sup>[4]</sup>. However, antibody titres should be routinely checked among all vaccinated students because in some case there are chances of non-response to the first series of vaccination<sup>[15]</sup>. A significant difference was seen when asked about the clinical features and the lesion associated with hepatitis B<sup>[7]</sup>. The level of knowledge and compliance with the recommended dosage of local anaesthesia and the drugs which should be cautiously used is poor. They should be educated more towards clinical applications. Students should be given counsel on medical emergencies and where should be trained to give coaching on such situations<sup>[6]</sup>. Students knowledge regarding the route of transmission of infection and universal precautions to be followed were checked in questions and we found that 96% were able to correctly mark the options given to them<sup>[13]</sup>. But they do not have knowledge on drug metabolism and interactions which has to be improved<sup>[10, 11]</sup>. Knowledge about the INR level to perform a surgery in hepatitis patients and the complications on treating a patient with hepatitis is significantly lower<sup>[9]</sup>. This study had clearly demonstrated their lack of awareness regarding HBV. The level of ignorance and the low awareness about immunization should draw attention at the earliest. It should be of prime importance that all the dental graduate student to have update about hepatitis B current protocol for immunization etc.<sup>[11, 12]</sup>.

#### 5. Conclusion

To conclude, knowledge regarding HBV transmission is essential for any medical professional students since they have to take the proper precautions as HBV is easier to transmit than HIV. This study also reflects the need of

advising screening and diagnostic tests for dental students and HBV. Dental students should be aware of post exposure prophylaxis in case of any accidental exposure to HBV.

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