

Hepatitis B Learning Needs Assessment of Family Medicine Residents in Metro Cebu*

Farah Durano Busico, MD

Background: Chronic hepatitis B (CHB) is a major public health concern in the Philippines where one out of eight Filipinos is infected with the Hepatitis B virus (HBV). Studies in the US among family physicians and in Canada among family medicine trainees have found that there were knowledge gaps with regards to CHB.

Objective: The objective of the study was to determine the knowledge on prevention, detection, and management of Chronic Hepatitis B among family medicine residents in Metro Cebu.

Methods: This is a cross-sectional study using a questionnaire focused on Hepatitis B vaccination, screening of at-risk patients, diagnostic testing, recognizing and managing patients with CHB and cirrhosis. The tool was adopted from a nationwide survey of Canadian family medicine trainees on hepatitis B. This was distributed to all family medicine residents of accredited training hospitals in Cebu.

Results: Thirty-nine family medicine residents in total were able to participate in the survey. On routine vaccination for hepatitis B, 69% of respondents recommended it to their patients. However, only 5% were able to correctly identify the recommended screening tests for Hepatitis B status and 36% of respondents used ALT/AST as an initial screening test for HBV. In correctly interpreting serologic patterns of HBV, 72% to 87% were able to answer correctly but only 8% were able to identify CHB patients who are at risk for hepatocellular carcinoma (HCC).

Conclusion: Results show that family medicine residents of Cebu need a review and an update in their knowledge on vaccination, use of appropriate screening tests, identifying risk factors for hepatitis B and recognizing those at risk for cirrhosis. Improvements in this area could help the trainees in decreasing risk of transmission for HBV; assist patients in receiving appropriate counsel, medical service and proper monitoring and assessment for treatment.

Keywords: Hepatitis B, cirrhosis, family medicine trainees, hepatocellular carcinoma

INTRODUCTION

One out of eight Filipinos is infected with the Hepatitis B virus (HBV) (Hepatology Society of the

Philippines, 2011). Therefore, chronic hepatitis B (CHB) is a major public health concern in the Philippines.¹ Primary care physicians should have competent knowledge on how to screen individuals for Hepatitis B and understand the implications of different phases of chronic hepatitis B infection in order to manage them properly and refer appropriately.

* From the Department of Family Medicine, AMOSUP Seamen's Hospital – Cebu

The Canadian Journal of Gastroenterology in March 2011 revealed the results of a nationwide survey in Canada that found that there were knowledge gaps with regards to CHB among family medicine trainees. They concluded that this could reflect how patients may not have been managed optimally and produced missed opportunities to prevent complications. Early diagnosis of hepatitis B is crucial because it provides the patient with the opportunity to be counseled about preventive measures to decrease the risk of transmission to others, receive preventive services, and be monitored and evaluated for therapy.²

There have been studies assessing knowledge levels and practice patterns of family medicine trainees², family physicians³ and primary care physicians⁴ concerning screening and management of chronic hepatitis B (CHB). All these studies have shown knowledge gaps or insufficient knowledge in Hepatitis B, thus suggest that opportunities to prevent potentially life-threatening complications are being missed.

The disease is endemic in the Philippines. A national seroprevalence study of Hepatitis B infection among adults in the Philippines reported a result of 16.7% which means an estimate of more than 7 million Filipinos were infected with HBV.⁵ It is therefore necessary to provide and commit resources in the assessment and where needed, improvement in the education of doctors especially family medicine practitioners whom we consider the front-line physicians. With the unfavorable statistics of Hepatitis B and its consequences, it would be beneficial for all when physicians are efficient and effective in the screening, diagnosis and management of Hepatitis B to decrease risk of transmission, facilitate infected patients to receive appropriate counsel and medical service.

This research was conducted with the goal to determine the knowledge on prevention, detection, and management of Chronic Hepatitis B among family medicine residents in the local area. After determining the profiles of respondents and ascertaining their knowledge on Chronic Hepatitis B in terms of vaccination, risk factors, screening and diagnostics, management and

indications for specialist referral, areas of learning with regards to Hepatitis B that need to be addressed can be assessed. This study is a benchmark for hepatitis B learning needs assessment of family medicine residents in Metro Cebu.

MATERIALS AND METHODS

Survey Design

This study is a cross-sectional study wherein an adopted questionnaire was used to assess respondents' knowledge on prevention, detection, and management of Chronic Hepatitis B. Hepatitis B vaccination, screening of at-risk patients, diagnostic testing, recognizing and managing patients with CHB and cirrhosis were the focus of the questionnaire. This was adopted from a nationwide study on learning needs assessment for Canadian Family Medicine trainees by Sam JJ, et al. in 2011. Permission to use the questionnaire was obtained from one of the authors via email.

Due to the limited number of residents/respondents in the area of concern, a pilot test was not conducted.

The questionnaire had been initially tested on primary care physicians in Canada and given to family medicine trainees to accredited residency programs across Canada. There are no ethnic or cultural sensitive questions in the questionnaire. The respondents consisted of family medicine residents in training hospitals in Cebu excluding the researcher. Pre-residents were excluded from the study.

Survey Administration and Data Collection

Family medicine chairpersons and training officers of accredited family medicine training programs of Cebu were contacted via email (and personal visits where feasible) with a description of the study and a request to distribute the survey/questionnaire to the participants on an agreed upon time and date. Each hospital of the

training program was visited and provided with a cover letter and all respondents were met by the researcher. Family medicine residents were provided with a consent form assuring participants of result confidentiality and anonymity.

All but 2 respondents were able to complete the test with the researcher present. Respondents' categorical profiles were expressed in frequency and percentages while continuous variables were described in mean and standard deviation.

RESULTS

Table 1 presents the profile and characteristics of the respondents. All accredited training programs in Cebu were able to participate.

Table 1. Respondent's demographic profile.

| Profiles | Descriptive (n=39) |
|---|-----------------------------|
| Sex | |
| Male | 14 (36%) |
| Female | 25 (64%) |
| Age, in years | |
| Mean (SD) | Mean: 33.38 33.38 (5.23) |
| Youngest – Oldest | 26-50 |
| Residency Program | |
| Cebu Velez General Hospital | 4 (10%) |
| Chong Hua Hospital | 1 (3%) |
| Mendero Medical Center | 7 (18%) |
| Perpetual Succour Hospital | 7 (18%) |
| Seamen's Hospital—Cebu | 10 (26%) |
| Visayas Community Medical Center | 1 (3%) |
| Vicente Sotto Memorial Medical Center | 9 (23%) |
| Level of training | |
| 1st year | 17 (44%) |
| 2nd year | 9 (23%) |
| 3rd year | 8 (21%) |
| 4th year | 5 (12%) |
| Patients with hepatitis B seen in the past month | |
| <5 | 25 (64%) |
| 6-10 | 9 (23%) |
| 11-20 | 1 (2%) |
| >20 | 3 (8%) |
| No answer | 1 (2%) |

Vaccination

Seventy-seven percent of respondents were able to answer correctly on how to protect infants born from HBsAg positive mother [i.e., Hepatitis B vaccine at birth + immunoglobulin therapy (HBIG) at birth together]. On routine vaccination for hepatitis B, 69% recommended it to their patients. Hepatitis A vaccination in CHB patients without HAV immunity was offered by 31% of respondents.

Screening

About 67% of respondents would routinely screen patients with risk factors of HBV. However, 23% incorrectly believe that a country with an HBV carrier of 2% did not require screening and 18% would not recommend screening of men who have sex with men.

Only 5% were able to correctly identify the recommended screening tests for Hepatitis B status (i.e., HBsAg, antiHBV surface antibody, antiHBV core antibody). Thirty-six percent of respondents used ALT/AST as an initial screening test for HBV.

In correctly interpreting serologic patterns of HBV that included immunity due to infection, previous infection, and active ongoing infection, 72% to 87% were able to answer correctly.

Cirrhosis Recognition and Management

Eighty-two percent of the family medicine residents of Cebu agreed that a patient with significant liver disease may still present with an alanine aminotransferase (ALT) value of within normal limits. Although only 56% correctly believed that some patients with cirrhosis may not show symptoms, 62% answered that a normal result in the abdominal ultrasound did not exclude cirrhosis.

In identifying CHB patients who are at risk for hepatocellular carcinoma (HCC), only 8% were able to identify the correct subgroup who will require surveillance (i.e., any individual >50 years old).

In the case presented of a 55 year old with a decreased platelet count but with intact liver function, 26% were able to recognize the patient's high chance of having cirrhosis.

In choosing the pain medication for cirrhotic patients, 56% of respondents preferred morphine while only 13% chose acetaminophen as the safest choice for patients with cirrhosis.

When to Refer

Majority of the respondents at 82% chose to refer to a specialist, the case presented of a 24 year old woman in the immune-tolerant phase (HBeAg+, Platelets 285,000, HBV DNA 9 log IU/mL, ALT 24) and only 41% decided that a 45 year old man with negative HBeAg with chronic hepatitis B, HBV DNA 5 log IU/mL, ALT of 43 IU/L and platelets of 145,000 warranted a referral for specialist management.

Current Levels of Knowledge

In identifying risk factors, screening, interpreting screening tests and vaccination for hepatitis B, 81% to 98% of respondents rated their current knowledge to be moderate to high. On recognizing cirrhosis, 74% of respondents graded themselves also to be moderate to high, however only 59% gave themselves the same rating for managing cirrhosis.

Desired Levels of Knowledge

Respondents rated their desired levels for knowledge for chronic hepatitis B at moderate to high at 98% while all of them wanted to learn more about recognizing and managing cirrhosis and screening for hepatocellular carcinoma.

Best Source for Updates

Many of the respondents did not pick just one source as the best means to update their knowledge but 23%

did prefer conferences and 59% chose multiple areas of learning via journals, books and online resources.

DISCUSSION

The results of this study show that there are areas of knowledge with regards to Hepatitis B and its complications in family medicine trainees that could be improved upon. Specifically, vaccination of CHB individuals with seronegative for HAV Ab, screening (appropriate tests as recommended by the Hepatology Society of the Philippines or HSP) and recognizing phases of chronic hepatitis B infection are some areas that family medicine trainees should focus on.

Only 5% of the respondents of the study chose the appropriate screening test for Hepatitis B screening. The 2014 HSP Consensus Statements on the Management of Chronic Hepatitis B recommend testing for HBsAg, anti-HBs and anti-HBc in screening for HBV.⁶ The result of the study is consistent with the one made in New Jersey, USA by Ferrante, et al.³ where family physicians showed limited knowledge on diagnostics for HBV testing with 21% preferring to refer patient to a specialist for more testing once found out to be HBsAg positive. In comparison Sam, et al.² found that of the family medicine trainees in their nationwide survey in Canada, 49% appropriately used the three recommended tests (HBsAg, AntiHBs and anti HBC, same as suggested by the Hepatology Society of the Philippines.) In this study, although the question did specifically ask for screening tests only for hepatitis B status, some respondents may have incorrectly chosen to test for ALT and HBeAg because of their confusion on the HSP consensus statements on initial evaluation for patients with CHB which includes ALT, HBeAg, antiHBe, HBV DNA and liver ultrasound. Although 69% would routinely consider Hepatitis B vaccination for their patients, only 31% would routinely offer hepatitis A vaccination for those with chronic hepatitis B. The HSP advocates vaccination for CHB patients who are seronegative for HAV antibody. Data show that

residents may not be aware of this recommendation and that patients who have chronic liver disease from HBV infection are at risk for developing fulminant hepatitis A.

In recognizing groups at high risk for hepatitis B, 23% would not routinely screen individuals from countries with an HBV carrier rate $\geq 2\%$. Countries with 2% to 7% HBsAg prevalence are considered to have intermediate endemicity and the Center for Disease Control recommends Hepatitis B vaccination for travelers in such regions.⁸ They may have incorrectly picked this choice because of the low number compared to the high seroprevalence of 16.7% hepatitis B infected Filipino adults as reported in 2013 by Wong, et al.⁵ Sixty-four percent of respondents saw less than 5 patients with hepatitis B in a month. Only 10% reported that they saw 11 to more than 20 patients with HBV. These data may suggest that respondents may not see enough patients or underestimate their reported cases of HBV thus may contribute to their lack of awareness and knowledge on CHB. In recognizing patients at risk for cirrhosis, only 26% in this study were able to answer correctly that in the case scenario showing normal hepatic functions but with a decline in platelet count would point to a high possibility. This is consistent with the Canadian study², in which only 3% of their respondents were able to accurately identify the likelihood. According to the HSP guidelines, patients with CHB that present with a reversal in the ALT to AST ratio (<1), a progressive decline in serum albumin and a prolongation of prothrombin time often with a decline in platelet counts would be suspected of liver cirrhosis.³

In choosing the safest pain medication for a cirrhotic patient, there is a misconception that Acetaminophen is not safe for patients with liver disease that is probably why 56% of the respondents in this study would prescribe morphine. In comparison to another study, Sam, et al.² showed that 80% of their family medicine trainee respondents preferred a narcotic or NSAID. However, caution should be exercised in using opiates in patients with liver disease as they are well-known to cause sedation, constipation, and precipitate encephalopathy. Only 13% of respondents believed that Acetaminophen is

safe to use to control pain in cirrhosis. Aside from and the absence of sedation, the advantage of Acetaminophen use also includes less danger of nephrotoxicity, thus making it a preferred analgesic in patients with liver disease.⁹

Many of the respondents were also unable to identify the case scenario of a young patient in the immune-tolerant phase which according to the HSP guidelines is defined as an HBV infection with positive HBeAg, markedly high HBV DNA ($>2,000,000$ IU/mL) and normal serum ALT with minimal to no evidence of hepatitis thus 82% of them decided to refer patient to a specialist which is not yet necessary at this stage. 70 to 80% of these patients become inactive HBsAg carriers. They eventually lose HBeAg with seroconversion to antiHBe, HBV DNA decrease to below 2,000, ALT persists to be normal and if done, liver biopsy would confirm absence of necroinflammatory disease. Unfortunately, respondents preferred not to refer the HBeAg negative with an increase of ALT and HBV DNA levels ($>2,000$ IU/mL). The patients in this phase have an increase rate of having acute flare of hepatitis and also of developing cirrhosis, and should be assessed, monitored and treated appropriately.³

The result of this study showed inconsistency of the residents' self assessment against the measurement of the level of knowledge regarding vaccination, screening of hepatitis B and recognizing patients at high risk for cirrhosis. In choosing what they consider would be the best way to update their knowledge on hepatitis B, 59% of residents could not decide on one but rather choose multiple avenues for learning but 23% did choose conferences as a best source of knowledge. This result was echoed by Robotin, et al. in their study on continuing medical education (CME) on hepatitis B for Australian primary care providers that there should be multiple and varied areas of educational activities that will support physicians in keeping up-to-date with constantly changing management of hepatitis B.

This study has several limitations. The collected data are based on self report and may not reflect actual

practice. Since there was no pilot test done, there may have been some questions that were unclear to the respondents even though the researcher was present during the data collection in all but 2 participating residents. Since the study is limited to residents, the results may not generalize family medicine physicians in actual practice.

CONCLUSION

This study has shown that there is room for improvement for family medicine residents of Cebu in their knowledge on vaccination, use of appropriate screening tests, identifying risk factors of hepatitis B and recognizing the phases of chronic hepatitis B infection and identifying patients at risk for cirrhosis. It is a welcome fact that all the participants in the study are interested in enhancing their education on HBV and its complications.

Studies on learning needs assessment of residents on hepatitis B from other regions of the country can be done to promote awareness of knowledge gaps in their training. Improved awareness on prevention, detection, and management of HBV could help family medicine practitioners in decreasing risk of transmission, help patients receive appropriate counsel and medical service and be properly monitored and assessed for treatment.

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