

# Hepatitis B Vaccination in patients with Chronic Hepatitis C; A Pilot Study of Knowledge, Attitude and Practice

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## SUMMARY

*Hepatitis B is a potentially lethal disease, caused by the hepatitis B virus (HBV). The virus infects people of all ages and every year, about 200,000 people are newly infected in the United States. Interferon alpha and lamivudine are the only available treatment modalities for Hepatitis B with variable results. Thus prevention of hepatitis B has become an important component of medical therapy. Persons who respond to the vaccine are protected from both acute and chronic hepatitis B infections. Although public health initiatives designed to prevent hepatitis B are in place, they seem to be underutilized and their utility has not been evaluated. The development of a comprehensive approach using public health initiatives in conjunction with strategies by health care providers is important because of the potential for decreasing the human and health care costs associated with hepatic dysfunction. The main aim of our study was to see the knowledge, its application and actual approach of treating physicians, gastroenterologists and hepatologists towards various aspects of vaccination of Hepatitis B in Chronic Hepatitis C patients. This pilot study was conducted in various departments of Shaikh Zayed Hospital, Lahore. It addressed some of the important aspects pertaining to knowledge, attitude and practice of Hepatitis B vaccination. 46 doctors were enrolled from various grades and specialties. Ninety eight percent of the interviewed doctors thought that hepatitis B was a preventable disease and more than 93% were vaccinated against it. Thirty eight doctors (83%) had family members with hepatitis B vaccination. Only a minority of doctors (9/46 i.e. 20%) gave advise to their OPD patients about hepatitis B vaccination, and even lesser numbers of doctors (7/46 i.e. 15%) actually asked their hepatitis C patients about hepatitis B vaccination. This low response rate suggests that the initiatives to prevent hepatitis B are underutilized.*

*Key Words: Hepatitis B, Vaccination, KAP, Healthcare Professionals*

## INTRODUCTION

**H**epatitis B is a common infectious disease with approximately 300 million carriers worldwide. A 7% prevalence rate is reported in Pakistan<sup>1,2</sup>. Patients may have hepatitis B as an acute or chronic infection or may manifest as asymptomatic carriers. Hepatitis B is a potentially lethal disease, caused by the hepatitis B virus (HBV). The virus infects people of all ages and every year, about 200,000 people are newly infected in the United States<sup>3</sup>. Of these, 90% eventually recover and clear the virus, but over 11,000 will have to be hospitalized and

over 20,000 (10%) will become chronically (permanently) infected with the virus. About 1.25 million people in the United States have chronic HBV infection, and more than 4,000 people die each year from hepatitis B related liver disease.

Currently interferon alpha and lamivudine are licensed for treatment of Hepatitis B with variable results ranging from 25 to 50% in different series<sup>4</sup>. Low response rate, a high cost of treatment and serious side effects are the limitations of presently available therapy. Thus prevention of hepatitis B has become an important component of medical therapy. Preventive strategies in hepatitis B have

focused on the administration of vaccine introduced in 1982<sup>5</sup>. The vaccines currently in use are made with recombinant DNA technology, and do not contain any live virus. More than 95% of children and adolescents and more than 90% of young, healthy adults develop adequate immunity following the recommended three doses<sup>6</sup>. Persons who respond to the vaccine are protected from both acute hepatitis B infections as well as chronic infection. Although public health initiatives designed to prevent hepatitis B are in place, they seem to be underutilized and their utility has not been evaluated<sup>7</sup>. The development of a comprehensive approach using public health initiatives in conjunction with strategies by health care providers is important because of the potential for decreasing the human and health care costs associated with hepatic dysfunction.

### Aims and Objectives

The main aim of this study was to see the knowledge, its application and actual approach of treating physicians, gastroenterologists and hepatologists towards various aspects of vaccination of Hepatitis B in Chronic Hepatitis C patients.

## PATIENTS AND METHODS

Forty six doctors of different specialties and grades were interviewed in this survey. They included consultants (physicians, gastroenterologists, surgeons) and residents (medical and surgical). They were asked to fill in a questionnaire containing five questions as follows:

- Is Hepatitis B a preventable disease?
- Are you vaccinated against Hepatitis B?
- Are your family members vaccinated against Hepatitis B?
- Do you advise your patients to have vaccination against Hepatitis B?
- Do you advise your patients with Hepatitis C to have vaccination against Hepatitis B?

Responses to all questions were recorded as YES or NO.

### Statistical Analysis

Results are reported as frequency and percentages. Variables were analyzed using Chi-square test with a  $p$  value  $< 0.05$  being significant for all analyses.

## RESULTS

This pilot study was conducted in various departments of Shaikh Zayed Hospital, Lahore. It addressed some of the important aspects pertaining to knowledge, attitude and practice of Hepatitis B vaccination. 46 doctors were enrolled from various grades and specialties. Eighteen out of 46 were consultants (39%). Seven were physicians, 4 were GE and 7 were surgeons, remaining 28 were residents (41%) distributed equally between medical and surgical floor (Table 1). Ninety eight percent of the interviewed doctors thought that hepatitis B was a preventable disease and more than 93% were vaccinated against it. 38 doctors (83%) had family

Table 1: Results of study (n=46)

No. of subjects	
Medical Consultant	7 (15.2%)
Surgical Consultant	4 (8.7%)
Gastroenterology Consultant	7 (8.7%)
Medical Resident	14 (30.4%)
Surgical Resident	14 (30.4%)
Response to questionnaire	
	Yes
1. Is Hepatitis B preventable	45 (98%)
2. Are you vaccinated?	43 (93.5%)
3. Are your family members vaccinated	38 (82.6%)
4. Do you advise your OPD patients for Hepatitis B vaccination	9 (19.6%)
5. Do you advise Hepatitis B vaccination for Hepatitis C related liver disease	7 (15.2%)

No statistically significant differences were seen in response to questions 1 to 3 across the different groups. ( $p > 0.05$  by Chi-square test)

Only Gastroenterology Consultants and Medical residents advised vaccination to their OPD and chronic C related patients ( $p < 0.05$  by Chi-square test)

members with hepatitis B vaccination. Only a minority of doctors (9/46 i.e. 20%) gave advice to their OPD patients about hepatitis B vaccination, and even lesser numbers of doctors (7/46 i.e. 15%) actually asked their hepatitis C patients about hepatitis B vaccination. No statistically significant difference was found across different departments for KAP (Knowledge, Attitude and Practice) for questions pertaining to the first three parameters.



Only Gastroenterology Consultant and Medical Residents advised routine hepatitis B vaccination to the OPD patients and specifically advised vaccination for patients with chronic C related liver disease ( $P < 0.05$ ).

## DISCUSSION

Hepatitis B is an inflammatory liver disease caused by the hepatitis B virus (HBV) that results in liver cell damage, which can lead to cirrhosis and increased risk of liver cancer.

A person who is exposed to hepatitis B virus can develop immunity or become chronically infected when the virus has not been cleared from the body within 6 months. The complications of chronic infection include cirrhosis, portal hypertension, hepatocellular carcinoma, liver failure, and death<sup>8</sup>. Over 5,000 persons die from chronic liver disease caused by HBV infection each year. The treatment modalities include Interferon (IFN) and Lamivudine which are only effective in small percentage of patients. Hence the main emphasis is now on prevention of the disease. This include non-drug measures (like practice of safe sex, avoid sharing of syringes, toothbrushes, razors, nail clippers etc) and vaccination. Vaccines are highly effective in preventing hepatitis B.

Individuals with hepatitis C virus (HCV) are at risk for acquiring hepatitis B virus (HBV) because of shared risk factors. A number of organizations recommend vaccination against HBV for patients with HCV<sup>9,10</sup>. The rationale for vaccinating these patients is to prevent hepatic super infections. Available data, although limited, suggest that HBV co infection with HCV causes more severe hepatic injury than infection with HCV alone<sup>10</sup>. At standard doses, hepatitis B vaccines are safe and immunogenic in patients with mild-to-moderate hepatitis C or chronic liver disease. Regardless of disease severity, vaccination should be routinely administered to patients upon diagnosis of HCV infection<sup>11</sup>. Early vaccination is important because response to vaccination is reduced as liver disease progresses. Prevacination and post vaccination serology testing is recommended in specific populations.

This study was designed to study the knowledge, attitude and practice of physicians in a tertiary care centre regarding hepatitis B

vaccination. Although 98% of the doctors agreed that hepatitis B vaccination was effective in preventing hepatitis B, only 20% actively educated their patients in OPD for hepatitis B vaccination. Majority of physicians agreed that patients with chronic hepatitis C and anti HCV positive cirrhosis were at risk of developing hepatitis B super infection which adversely affects their prognosis yet only 15% actually advised hepatitis B vaccination to patients with chronic C related liver disease. This low response rate suggests that the initiatives to prevent hepatitis B are underutilized. Health care providers need to be reminded that the economic cost of managing patients with chronic hepatitis B can only be reduced by a comprehensive public health program in which clinicians play a pivotal role. Mass education of patients both in the wards and out patients by health care providers emphasizing the role of hepatitis B in chronic and often lethal complications of liver disease and its effective prevention by vaccination especially in patients who already have chronic hepatitis C related liver dysfunction will have a important impact on the prognosis of these patients.

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