



## A STUDY ON ROLE OF HBV VACCINATION IN CHRONIC LIVER DISEASE

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### ABSTRACT

To evaluate the need of HBV vaccination in chronic liver disease patients..Materials and Methods:One hundred consecutive alcoholic patients (Males98: Female 2)with decompensated Chronic liver disease patients who attended the department of Medical gastroenterology ,Government Mohan Kumaramangalam Medical college Tamilnadu, India were screened in a period of six months for HBsAg, Anti Hbc , anti HCV and HIV, apart from the routine investigations like complete hemogram, liver function tests, PT INR, alpha fetoprotein, ultrasound abdomen and portal venous doppler. Patients were between 20 and 64 years of age. Results: Thirteen patients tested positive for HBV (11 HBsAg and 2 HBsAg negative but Anti Hbc positive) and 10 patients were anti HCV positive. None were positive for both HBV and HCV. No one was HIV positive. Other causes of chronic liver disease were ruled out, namely metabolic syndrome and diabetes mellitus, autoimmune hepatitis, Wilson disease, etc. Conclusion: Although it is a known fact that patients with alcoholic liver disease (chronic) also test positive for HCV, in this study it has been shown that a substantial number of patients tested positive for HBV also. Hence vaccination against HBV is appropriate for patients with chronic liver disease who test negative for HBV at the time of diagnosis.

**KEYWORDS** : Chronic liver disease , HBV vaccination

### Background:

Patients with a chronic disease are likely to get worsening of the underlying disease if exposed to another infection. These individuals usually have some suppression of their immune system; therefore, if they are exposed to influenza, they are more likely to die due to complications such as pneumonia. Similarly, people with chronic liver disease who develop acute hepatitis A become sicker than otherwise healthy individuals, and chronic liver disease patients are also more likely to die due to hepatitis A<sup>[1]</sup>. When hepatologists talk about vaccinating patients with chronic liver disease, they are typically referring to vaccination against hepatitis A virus (HAV) and/or hepatitis B virus (HBV), but other vaccines may also be indicated in this population<sup>[2]</sup>. In one sense, patients with chronic liver disease are no different from the general population. Both groups require appropriate immunizations in order to maintain their general health status. However, for some individuals with chronic liver disease due to the bloodborne pathogens, shared risk factors may result in dual infections with hepatitis B and C or exposure to hepatitis A. Data suggest that the prevalence of hepatitis A infection is higher in patients with chronic liver disease than in the general population<sup>[3]</sup>. Furthermore, in patients with chronic liver disease or in recipients of liver transplants, the superimposition of another acute disease (hepatitis virus superinfection, influenza, and pneumococcal infection) may result in higher morbidity and mortality than in individuals without pre-existing liver disease. The rationale for HBV vaccination in patients with chronic liver disease is not well understood. Experts observe that patients with chronic liver disease who develop an HBV infection are more likely to have a severe infection and may die from the consequences of this viral infection<sup>[4]</sup>. But there are no conclusive evidences or sufficient data to support. The data indicate that patients will have more severe disease if they have chronic HBV infection on top of another chronic liver disease—for example, chronic HBV and chronic hepatitis C virus co-infection. Likewise, patients with chronic HBV infection and alcoholic liver disease will have more severe disease than patients with only one of these conditions<sup>[5]</sup>. The increased risk comes from having 2 types of chronic liver disease, not becoming infected with HBV. HBV vaccination will certainly be beneficial for the patients with chronic

liver disease because it will prevent HBV infection and development of any chronic infection that might subsequently can be prevented but the possibility of HBV infection developing in patients without risk factors is very low. Considering the availability of public health resources the physicians must choose which patients to vaccinate, focusing on HBV vaccination in patients with chronic liver disease who are otherwise not at risk for hepatitis B might not be the best use of resources.

### Aim:

The main aim of the study is to evaluate the need of HBV vaccination in chronic liver disease patients. Materials and Methods: Study design: Descriptive prospective study. Study period: January 2013 to June 2013. This study was conducted in department of Medical gastroenterology Government Mohan Kumaramangalam Medical college Tamilnadu. Study population: 100 consecutive patients with chronic liver disease. Informed consent was obtained from all patients.. Exclusion criteria: Terminally ill patients with Child C score, Immunosuppressed patients, Patients with malignancy.

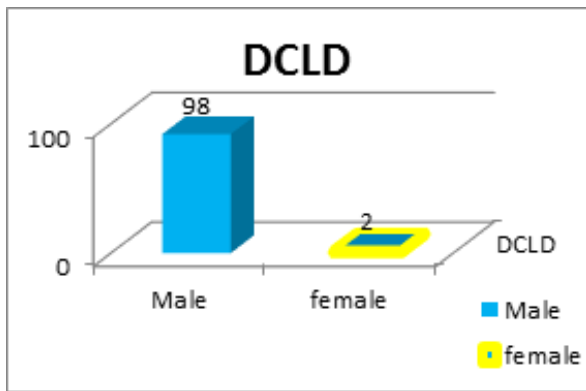
### Materials and Methods:

One hundred consecutive alcoholic patients (Males98: Female 2)with decompensated Chronic liver disease patients who attended the department of Medical gastroenterology ,Government Mohan Kumaramangalam Medical college Tamilnadu, India were screened in a period of six months for HBsAg, Anti Hbc , anti HCV and HIV, apart from the routine investigations like complete haemogram, liver function tests, PT INR, alpha fetoprotein, ultrasound abdomen and portal venous doppler. Age group of the Patients were between 20 and 64 years.

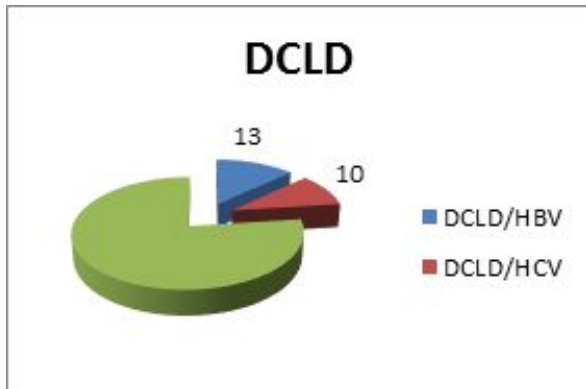
### Results:

Thirteen patients tested positive for HBV (11 HBsAg and 2 HBsAg negative but Anti Hbc positive) and 10 patients were anti HCV positive. None were positive for both HBV and HCV. No one was HIV positive. Other causes of chronic liver disease were ruled out, namely metabolic syndrome and diabetes mellitus, autoimmune hepatitis, Wilson disease, etc. Figure:1 Sex distribution Figure:2 HBV/HCV in DCLD

**Figure:1 Sex distribution**



**Figure:2 HBV/HCV in DCLD**



**Discussion:**

Vaccination practices in Chronic liver disease is not well studied. Previous studies have demonstrated that vaccination is at a low level. National Health and Nutrition Examination Survey (NHANES) database in 2011 demonstrated that vaccination rates from 1999 to 2008 in chronic liver disease patients. From 1999 to 2004 and 2005 to 2008 two groups were evaluated with increased vaccination rates against HAV and HBV. Regardless, overall vaccination rates remained low (13.3% to 20.0% and 23.4% to 32.2%, resp<sup>[6]</sup>). NHANES database limitation is the risk of overestimating vaccination rates since the hospitalized patients are not included.. Wörns et al study on patients with autoimmune hepatitis in Germany showed that vaccination rates of 13% and 11% for HAV and HBV vaccinations, respectively<sup>[7]</sup>. Interestingly, these studies reveal a large variation in vaccination rates and it is likely that heterogeneity in etiology of chronic liver disease may explain these findings..Various observations suggest that vaccinating at an earlier age <50 years and also at an early stage of chronic liver disease (child A), the immunogenicity of HBV vaccination is superior when compared with patients w more than 50 years of age and with child B Stage.In our study the HBV was noted in 13 pateints and HCV was noted in 10 patients indicating that the patients with Chronic liver disease are at risk of acquiring serious infection hence need to be protected against them

**Conclusion:**

Although it is a known fact that patients with alcoholic liver disease (chronic) also test positive for HCV, in this study it has been shown that a substantial number of patients tested positive for HBV also. Hence vaccination against HBV is appropriate for patients with chronic liver disease who test negative for HBV at the time of diagnosis.

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