# Hepatitis B

## Executive summary

## Introduction

Hepatitis B virus (HBV) infection is a worldwide healthcare problem, especially in developing areas. In The Gambia, approximately 1 in every 10 adults is chronically infected with HBV. This virus can be passed in blood, from mother to child at birth, in early life from child to child with close contact, or through unprotected sex with an infected partner. For the last 25 years, all children born in The Gambia are offered vaccination against HBV. However, adults over 30 years of age were born before the vaccine was introduced and may carry the virus.

People with HBV may have no symptoms. However, in some people, the virus may silently damage the liver and eventually cause liver cancer and liver failure. Hence, the need for follow up of all hepatitis B patients with or without symptoms.

Because not everyone who is infected with HBV will develop symptoms and disease, current international guidelines recommend treatment for those HBV infected patients with or at risk of advanced liver disease or liver cancer.

## Target users

* Doctors
* Nurses

## Target area of use

* CSD clinic
* Liver clinic

## Key areas of focus / New additions / Changes

This document outlines the initial assessment and annual review of HBV infected patients who are not on treatment, as well as the referral protocol for HBV patients between CSD and MATCH B/ Liver clinic. Also outlined is Fibroscan interpretation in chronic liver disease.

## Presenting symptoms and signs

### The pathogenesis and clinical manifestations of hepatitis B are due to the interaction of the virus and the host immune system, which leads to liver injury and, potentially, cirrhosis and hepatocellular carcinoma. Patients can have either an acute symptomatic disease or an asymptomatic disease.

Majority of the HBV patients who present to the MATCH B/Liver clinic and the MRCG CSD will be in the immune tolerant phase of the infection and/or will have an inactive chronic infection without any evidence of active disease. These are asymptomatic carriers. A few patients will present with chronic active hepatitis and may have symptoms ranging from those of acute hepatitis to end-stage liver disease.

Icteric hepatitis is associated with a prodromal period during which a serum sickness-like syndrome can occur. The symptomatology is more constitutional and includes the following:

* Anorexia
* Nausea
* Vomiting
* Low-grade fever
* Myalgia
* Fatigability
* Right upper quadrant and epigastric pain (intermittent, mild to moderate)
* Ascites
* Gastrointestinal bleeding
* Coagulopathy
* Mental confusion
* Coma
* Hepatic encephalopathy
* Disturbances in sleep pattern
* Somnolence

## Examination findings

The physical examination findings in hepatitis B disease vary from minimal to impressive (in patients with hepatic decompensation), according to the stage of disease.

Patients with acute hepatitis usually do not have any clinical findings, but the physical examination can reveal the following;

* Low-grade fever
* Jaundice
* Hepatomegaly
* Splenomegaly
* Palmar erythema

The physical examination of patients with chronic hepatitis B virus infection can reveal stigmata of chronic liver disease such as the following:

* Hepatomegaly
* Splenomegaly
* Muscle wasting
* Palmar erythema
* Vasculitis

Patients with (decompensated) cirrhosis may have the following findings:

* Ascites
* Jaundice
* History of variceal bleeding
* Peripheral oedema
* Gynaecomastia
* Abdominal collateral veins

## Management

### Acute Hepatitis B virus infection

The incidence of acute HBV infection has been decreasing for a number of years due to widespread vaccination and routine blood testing. Acute HBV infection is characterised by the onset of symptoms 1–4 months after exposure. A serum sickness-like syndrome may occur, followed by an illness characterised by anorexia, nausea, jaundice and right upper quadrant pain. Symptoms usually disappear after 1–3 months, but some patients have prolonged fatigue even after liver function tests have normalised.

Elevated ALT/AST with values up to 1000–2000 IU/L are characteristic of acute HBV. Prothrombin time is the best guide to prognosis. In the early phase of infection, HBsAg, anti-HBc IgM and HBeAg are all positive.

The management of acute HBV is symptomatic care:

* Bed rest and nutritional support are central.
* Anti-nausea medications may be of benefit, and
* limited doses of paracetamol (< 2 g a day) or codeine may be cautiously administered for abdominal pain or fevers.

Since most patients recover, antiviral therapy is not generally recommended. Patients should be monitored regularly with laboratory tests during the acute phase of their illness, and referred for specialist review if they have a prolonged prothrombin time, elevated serum bilirubin concentration, signs of encephalopathy, or if the illness is uncharacteristically lengthy.

Repeat HBV serological assessment (HBsAg, HBeAg, and anti-HBc) following recovery from the icteric illness to identify the small proportion of patients who develop CHB.

### Chronic Hepatitis B virus infection

The physical examination in chronic HBV patients should include an assessment for spider angioma, gynecomastia, and splenomegaly, which are indicative of more advanced liver disease.

An assessment of family history of cirrhosis and HCC, alcohol and smoking habits, and current medication and herbal product use should be undertaken. Although prothrombin time and bilirubin are normal in most outpatients with chronic HBV, serial assessment of serum aminotransferase (i.e., aspartate aminotransferase [AST] and alanine aminotransferase [ALT]) levels can help determine the current status of infection.

In addition, a complete blood count can help detect thrombocytopenia, which is an early marker of portal hypertension. Chronic HBV patients should be screened for concomitant human immunodeficiency virus coinfection.

Finally, a baseline serum alpha‐fetoprotein level, transient elastography (TE) or FibroScan and liver ultrasound is recommended to screen for early stage HCC, cirrhosis, and other causes of liver disease.

### Initial assessment of chronic HBV patients not on treatment

History and physical examination

* Education to reduce transmission
* Test/vaccinate household and sexual contacts
* Minimize alcohol and smoking
* Family history of HCC/cirrhosis
* Assess body mass index
* Examine for signs of liver disease (spider nevi, gynecomastia, ascites, collateral veins (abdomen), etc.

Laboratory tests

* Serum AST/ALT, albumin, bilirubin, INR, complete blood count, platelet count
* Renal function (serum creatinine)
* Quantitative HBV DNA viral load level
* Exclude HIV coinfection
* Serum AFP and liver ultrasound
* Transient Elastography (TE) or FibroScan

### Annual follow‐up evaluation for chronic HBV patients not on treatment

This should be done every 6-12 months in patients who are stable and do not require antiviral therapy. Reassessment includes:

History and physical examination for any liver disease or progression.

Laboratory tests/ Imaging

* LFT (ALT, AST and GGT)
* Serum creatinine
* Complete blood count
* Abdominal Ultrasound scan
* Transient Elastography (TE) or FibroScan

## Transient Elastography (TE) or FibroScan

Transient elastography (TE) or FibroScan is a painless, non-invasive technique that estimates the degree of liver scarring. Results are measured in kilopascals (kPa) which correlate with fibrosis score as determined by biopsy. Cut-off values are given that can accurately place the patient in different stages of fibrosis. A meta-analysis of the use of TE in chronic HBV found that it performed well in detecting cirrhosis (sensitivity 85% and specificity 82%).

### Indications

FibroScan® is very useful in the assessment of patients with chronic liver disease, including chronic hepatitis C, chronic hepatitis B, chronic alcohol abuse, and non-alcoholic fatty liver disease. The concept is that as more fibrosis and scarring occur, the higher the liver stiffness reading will be. This reading may be used to:

* estimate the existing degree of liver damage
* monitor disease progression or regression via serial measurements
* guide prognosis and further management, including treatment.

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| **FIBROSCAN VALUE(KPa)** | **2-7.4** | **7.5-8.2** | **8.3-9.4** | **≥9.5** |
| **METAVIR** | F0/F1 | F2 | F3 | F4 |
| **INTERPRETATION** | No or mild fibrosis | Fibrosis | Significant fibrosis | Cirrhosis |

Possible reasons for an over-estimation of FibroScan:

* Liver inflammation (eg. active hepatitis)
* Cholestasis (eg. biliary obstruction)
* Mass lesions within the liver (eg. tumour)
* Liver congestion (eg. heart failure)

Failure or unreliable readings are seen more frequently in patients with the following characteristics:

* Obesity (BMI >30–35 kg/m2)
* Older age
* Presence of ascites
* Features of the metabolic syndrome (type 2 diabetes, hypertension, increased waist circumference)

**Algorithm for referral of hepatitis b patients to match b/ liver clinic**

**Confirmed hepatitis B on follow up**

**Newly diagnosed / referral**

See at CSD and send patient for ALT, AST, GGT, creatinine, FBC

abdominal US scan

HIV serology

See at MATCH-B clinic

Give patients appointment to attend MATCH-B clinic in 1 week (not on Fridays)

Advise patient to fast on day of appointment

At MATCH-B clinic

* Fibroscan
* Review lab results
* Assess treatment eligibility
* Provide counselling
* Give follow up appointment

## General recommendations for HBV patients

* Minimize alcohol consumption
* Stop smoking
* Stop eating mouldy groundnuts
* Avoid toxins and herbal medications
* Balanced diet and exercise to reduce insulin resistance/hepatic steatosis
* Acetaminophen analgesics < 4 g/day preferred over NSAIDs/aspirin
* Use of steroids/immunosuppressants/chemotherapy requires prophylactic oral antiviral

## References

Terrault N, Bzowej N, Chang K, Hwang JP, Jonas MM, Murad MH; American Association for the Study of Liver Diseases. AASLD guidelines for treatment of chronic hepatitis B. Hepatology 2016;63:261-83.

European Association for the Study of the Liver. EASL 2017 Clinical Practice Guidelines on the management of hepatitis B virus infection. J Hepatol 2017;67:370-98.

Lemoine M, Shimakawa Y, Nayagam S, et al. The gamma-glutamyl transpeptidase to platelet ratio (GPR) predicts significant liver fibrosis and cirrhosis in patients with chronic HBV infection in West Africa. Gut 2015.

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| Written by: | Name: Sulayman Bah | Date: 24 March 2020 |
| Reviewed by: | Name: Gibril Ndow | Date: 16 April 2020 |
| Version: | Change history: | Review due date: |
| 1.0 | New document | 16 April 2022 |
| Review Comments (if applicable) |  |  |