# Comparisons of efficacy and safety between Tenofovir and Entecavir drugs in chronic hepatitis B patients

Submission date	Recruitment status	<ul><li>Prospectively registered</li></ul>
25/08/2019	No longer recruiting	☐ Protocol
Registration date	Overall study status	Statistical analysis plan
03/09/2019	Completed	Results
Last Edited	Condition category	Individual participant data
06/09/2019	Infections and Infestations	Record updated in last year

## Plain English summary of protocol

Background and study aims

Hepatitis B virus (HBV) infection is an important global health problem with an estimated 400 million chronically infected people. Patients with chronic hepatitis B (CHB) have a lifetime risk of 15-40% to develop liver cirrhosis and hepatocellular carcinoma (HCC). Increasing HBV DNA levels have also been shown to be associated with increasing risk of liver cirrhosis and HCC. Thus, one of the primary objectives of anti-HBV therapy is complete sustained suppression of viral replication to prevent HBV related cirrhosis, HCC and even mortality. Entecavir (ETV) and Tenofovir (TDF) are two potent drugs to suppress viral replication with lower rate or absence of long-term resistance in clinical trials and real-word experience. ETV and TDF are recommended as first line antiviral agents in CHB treatment.

## Who can participate?

Patients with CHB and NA-naïve HBeAg-positive or HBeAg-negative over age 20 who meet the national reimbursement criteria in Taiwan.

### What does the study involve?

Participants are randomized 1:1 to receive ETV 0.5mg or TDF 300mg once daily for 144 weeks. All patients were followed up at week 4 and 12 and then every 12 weeks after.

What are the possible benefits and risk of participating?

Participants may benefit from Tenofovir or Entercavir treatment in patients with chronic active hepatitis or cirrhosis.

Possible risks may be mild decrease eGFR and bone density changes.

Where is the study run from?

Kaohsiung Chang Gung Memorial Hospital, Taiwan

When is the study starting and how long is it expected to run for? April 2012 to July 2018 Who is funding the study? Investigator initiated and funded

Who is the main contact? Dr Tsung-Hui Hu dr.hu@msa.hinet.net

## Contact information

## Type(s)

Scientific

#### Contact name

Mr Tsung-Hui Hu

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## Additional identifiers

### Clinical Trials Information System (CTIS)

Nil known

## ClinicalTrials.gov (NCT)

Nil known

#### Protocol serial number

100-06070D

## Study information

#### Scientific Title

Comparisons of efficacy and safety between Tenofovir and Entecavir in chronic hepatitis B patients: an open level randomized clinical trial

## **Study objectives**

Tenofovir and Entecavir have similar antiviral efficacy but Tenofovir has an adverse effect on renal and function and bone density

## Ethics approval required

### Old ethics approval format

### Ethics approval(s)

Approved 30/04/2012, Ethics Committee of Chang Gung Memorial Hospital (No 199, Dunhua N Rd. Songshan Dist. Taipei City, Taiwan; ccyi@cgmh.org.tw; +886-3-3196200 ext 3713), ref: 100-06070D

### Study design

Open level randomized control trial

### Primary study design

Interventional

## Study type(s)

Treatment

## Health condition(s) or problem(s) studied

Hepatitis B

#### **Interventions**

This was a randomized, open-label study in NA-naïve HBeAg-positive and HBeAg-negative patients with CHB.

Each patient was randomized 1:1 to receive ETV 0.5mg or TDF 300mg once daily for 144 weeks. Randomized treatment assignments were generated by a central randomization center. Patients were randomized using a block design stratified by gender, HBeAg status, HBV-DNA levels and cirrhosis status.

All patients were followed up at week 4 and 12 and then every 12 weeks after.

#### Intervention Type

Drug

#### **Phase**

Not Applicable

## Drug/device/biological/vaccine name(s)

Tenofovir disoproxil fumarate, Entecavir

## Primary outcome(s)

Proportion of patients with undetectable HBV DNA level at week 48, 96 and 144. Serum HBV DNA levels were analyzed using the Cobas AmpliPrep-Cobas TaqMan HBV test (CAP-CTM)(Roche Molecular System, Inc., Branchburg, NJ, USA), with a lower detection limit of 70 copies/ml

## Key secondary outcome(s))

- 1. Presence of HBsAg, HBeAg was assessed using electrochemiluinesence immunoassay (ECLIA) 3.0
- 2. Renal function measured by the serum creatinine and estimated glomerular filtration rate (eGFR)
- 3. Anti-HDV antibodies was assessed using radioimmunoassay (Abbott, North Chicago, IL, USA)

### Completion date

03/08/2018

## Eligibility

### Key inclusion criteria

The inclusion criteria included three populations:

- 1. Chronic hepatitis B patients with hepatitis B virus surface antigen (HBsAg)
- 1.1 Positive status for more than 6 months
- 1.2 Elevated alanine transferase (ALT) levels  $\geq$  5x ULN (200 IU/L) or ALT levels between 2x and 5x ULN combined HBV DNA  $\geq$ 20000 IU/ml for HBeAg positive patients
- 1.2 ALT levels over 2x ULN combined HBV DNA ≥2000 IU/ml for HBeAq negative patients
- 2. Acute hepatic decompensated patient (prolong prothrombin time >3 sec and bilirubin>2 mg/dL) with positive for HBsAg
- 3. Clinical cirrhosis with HBV DNA ≥2000 IU/ml. The clinical evidence of cirrhosis was defined by one of the following
- 3.1 Ultrasound diagnosed liver cirrhosis with evidence of splenomegaly or esophageal or cardiac varices
- 3.2 Liver biopsy diagnosed liver cirrhosis
- 4. Aged 20 years or older.

### Participant type(s)

Patient

#### Healthy volunteers allowed

No

## Age group

Adult

#### Sex

All

### Key exclusion criteria

- 1. Patients who had co-infection with human immunodeficiency virus, hepatitis C virus, hepatitis D virus or hepatitis E virus by serological assays
- 2. Patients who had a significant intake of alcohol (>20g/day for women; 30 g/day for men)

## Date of first enrolment

01/04/2012

#### Date of final enrolment

31/07/2016

## Locations

## Countries of recruitment

Taiwan

## Study participating centre Kaohsiung Chang Gung Memorial Hospital

123 Ta-Pei Road Niao Sung District Kaohsiung Taiwan 833

## Sponsor information

#### Organisation

Kaohsiung Chang Gung Memorial Hospital

#### **ROR**

https://ror.org/00k194y12

## Funder(s)

## Funder type

Other

#### **Funder Name**

Investigator initiated and funded

## **Results and Publications**

## Individual participant data (IPD) sharing plan

All data generated or analysed during this study will be included in the subsequent results publication

## IPD sharing plan summary

Other

## **Study outputs**

Output type Date created Date added Peer reviewed? Patient-facing? **Details** Participant information sheet

Participant information sheet

11/11/2025 11/11/2025 No

Yes