

## ABSTRACT

**Background :** 316 million people living with chronic Hepatitis B making the disease a major health burden worldwide. Hepatitis B virus infects the liver leading to necrosis and inflammation. Antiviral treatment helps to stop the progression of variable degree of tissue scarring or fibrosis during active hepatitis. The optimal duration of therapy for the oral drugs is not well established. Most patients receiving nucleos(t)ide analog therapy will require at least four to five years of treatment, and some may require indefinite treatment. Long-term treatment is particularly important for patients with cirrhosis. Quantification HBV DNA reflects the viral load and determines the replication and infectivity of the virus, hence used in monitoring of virological treatment response. Hence, assessing the result of viral load at the baseline level and every 6 months during the course of treatment may be used as consideration of the antiviral therapy management.

**Aim of Study :** To find the correlation between duration of treatment and undetected viral load during chronic Hepatitis B antiviral therapy

**Methods :** The research is conducted using retrospective observational cross-sectional study. Chronic Hepatitis B visiting RSUP Dr. Sardjito hospital outpatient clinic who have received antiviral medication and who meet the inclusion and exclusion criteria are the research subjects. The research subjects are incorporated until minimum sample size is fulfilled. The inclusion criteria are: age  $\geq 18$  years old; Diagnosed with Chronic Hepatitis B that has received antiviral therapy; and had HBV DNA data taken at baseline and get repeated during the course of treatment every 6 months.

**Result:** Correlation analysis of therapy duration and baseline viral load indicates significant positive strong correlation ( $r = 0.605$ ) . On bivariate analysis, HBeAg status, AST and ALT affect the duration of therapy. Based on the multivariate analysis, viral load ( $p = 0.004$ ) and HBeAg ( $p = 0.013$ ) individually significantly affect treatment duration.

**Conclusion:** There is strong positive correlation between duration of treatment and undetected viral load during antiviral therapy chronic Hepatitis B.

**Key words:** Chronic Hepatitis B, HBV DNA, Antiviral Therapy, Treatment response

## **ABSTRAK**

**Latar Belakang :** 316 juta orang hidup dengan Hepatitis B kronis membuat penyakit ini menjadi beban kesehatan seluruh dunia. Virus Hepatitis B menginfeksi hati yang menyebabkan nekrosis dan inflamasi. Terapi antiviral dibutuhkan untuk menghentikan rusaknya jaringan dan fibrosis pada saat infeksi hepatitis aktif. Durasi optimal untuk terapi antiviral belum ditentukan. Kebanyakan pasien menerima nucleos(t)ide analog therapy selama empat sampai lima tahun dan beberapa memerlukan terapi seumur hidup, terutama pasien dengan sirosis hati. Nilai HBV DNA kuantitatif menunjukkan *viral load* (jumlah virus) dan menentukan replikasi serta infektivitas dari virus sehingga digunakan untuk memantau respon virologis dari terapi. Oleh karena itu, membandingkan hasil *viral load* saat penilaian awal sebelum terapi dan setiap 6 bulan setelah pasien menerima terapi dapat digunakan sebagai pertimbangan manajemen terapi antiviral.

**Tujuan :** Untuk mencari korelasi antara durasi terapi dan tidak terdeteksinya *viral load* selama terapi antiviral Hepatitis B

**Metode :** Penelitian ini menggunakan model studi potong lintang dengan pendekatan retrospektif. Pasien poliklinik penyakit dalam RSUP Dr. Sardjito yang menerima terapi antiviral yang memenuhi kriteria inklusi dan eksklusi adalah subjek penelitian. Kriteria inklusinya adalah: umur  $\geq 18$  tahun ; Diagnosis Hepatitis B Kronis dan menjalankan terapi antiviral ; dan telah dilakukan pengambilan data HBV DNA sebelum terapi dan pengulangan setiap 6 bulan.

**Hasil:** Analisis korelasi antara durasi terapi dan *baseline viral load* menunjukkan korelasi positif yang signifikan dan kuat ( $r = 0,605$ ). Pada analisis bivariat, status HBeAg, AST, dan ALT mempengaruhi durasi terapi. Berdasarkan analisis multivariat, *viral load* ( $p = 0,004$ ) dan HBeAg ( $p=0,013$ ) secara individual memengaruhi durasi pengobatan.

**Kesimpulan:** Ada korelasi positif kuat antara durasi terapi dan tidak terdeteksinya *viral load* selama terapi antiviral Hepatitis B

**Key words:** Hepatitis B Kronik, HBV DNA, Terapi Antiviral, Respon Terap