

## INTISARI

### PERAN SKOR *ASPARTATE AMINOTRANFERASE TO PLATELET RATIO INDEX* (APRI) *BASELINE* DALAM MENDETEKSI PERUBAHAN *VIRAL LOAD* HEPATITIS B VIRUS DNA PADA PENDERITA HEPATITIS B KRONIK YANG MENDAPATKAN TERAPI TENOVOFIR SELAMA SATU TAHUN DI RUMAH SAKIT UMUM PUSAT DR. SARDJITO

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**Pendahuluan** : Hepatitis B merupakan salah satu penyebab utama penyakit hati kronik. Sekitar 30–40% kematian terkait komplikasi sirosis dan kanker hati disebabkan oleh infeksi hepatitis B. Tenofovir merupakan salah satu obat penyakit hepatitis B karena memiliki efektifitas yang baik dan dapat menekan *viral load* hepatitis B virus (HBV) DNA sebesar 76–80% setelah satu tahun pengobatan. Penilaian Fibrosis hati sangat penting untuk penentuan terapi. Skor *Aspartate Aminotransferase to Platelet Ratio Index* (APRI) merupakan metode non-invasif yang dapat digunakan untuk menilai derajat fibrosis.

**Tujuan** : Mengetahui peran skor APRI *baseline* dalam mendeteksi perubahan *viral load* HBV DNA yang mendapatkan terapi tenofovir selama satu tahun.

**Metode Penelitian** : Penelitian ini menggunakan desain kohort retrospektif berdasarkan data rekam medis pasien hepatitis B kronik yang mendapat terapi tenofovir dan menjalani kontrol di Poliklinik Gastroenterohepatologi RSUP Dr. Sardjito pada tahun 2023. Variabel yang dikumpulkan meliputi usia, jenis kelamin, status HBeAg, kadar AST, jumlah trombosit, dan viral load HBV DNA. Pasien dibagi menjadi dua kelompok berdasarkan nilai APRI *baseline*, yaitu APRI  $\geq 0,5$  dan  $< 0,5$ . Luaran utama adalah perubahan *viral load* HBV DNA terdeteksi menjadi tidak terdeteksi setelah satu tahun terapi. Analisis dilakukan menggunakan uji *chi-square*, sedangkan nilai *cut-off* APRI ditentukan melalui kurva *Receiver Operating Characteristic* (ROC).

**Hasil Penelitian** : Sebanyak 49 pasien yang memenuhi kriteria inklusi. Tidak terdapat perbedaan bermakna terkait usia, jenis kelamin, status HBeAg, dan kadar *viral load* awal antara kedua kelompok. Nilai *cut-off* optimal APRI adalah 0,489 (AUC = 0,735; p = 0,006) dengan sensitivitas 78,9% dan spesifisitas 70%, sesuai dengan literatur yang merekomendasikan *cut-off* APRI sebesar 0,5. Terdapat perbedaan bermakna antara skor APRI *baseline* dengan perubahan *viral load* HBV DNA (p = 0,022), dengan odds ratio (OR) 4,0 (95% CI: 1,19–13,47).

**Kesimpulan** : Terdapat hubungan signifikan antara skor APRI *baseline* dan perubahan *viral load* HBV DNA pada pasien hepatitis B kronik yang mendapat terapi tenofovir selama satu tahun. Pasien dengan skor APRI *baseline*  $\geq 0,5$  memiliki risiko empat kali lebih besar untuk tetap memiliki HBV DNA terdeteksi setelah satu tahun terapi dibandingkan dengan pasien dengan skor APRI  $< 0,5$ .

**Kata kunci** : APRI, Hepatitis B Kronik, Tenofovir, *viral load* hepatitis B DNA.

THE ROLE OF BASELINE ASPARTATE AMINOTRANSFERASE TO PLATELET RATIO INDEX (APRI) SCORE IN DETECTING CHANGES IN HEPATITIS B VIRUS DNA VIRAL LOAD AMONG CHRONIC HEPATITIS B PATIENTS RECEIVING ONE-YEAR TENOFOVIR THERAPY AT DR. SARDJITO GENERAL HOSPITAL

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**Background** : Hepatitis B is one of the leading causes of chronic liver disease, cirrhosis, and hepatocellular carcinoma. Chronic hepatitis B accounts for approximately 30–40% of deaths resulting from these complications. Tenofovir is a first-line antiviral drug with high efficacy, capable of reducing hepatitis B virus (HBV) DNA viral load by 76–80% after one year of therapy. Assessment of liver fibrosis is essential for prognosis and treatment initiation. The Aspartate Aminotransferase to Platelet Ratio Index (APRI) is a simple, non-invasive, and cost-effective tool for evaluating the degree of liver fibrosis, offering an accessible alternative to invasive diagnostic methods.

**Objective** : To determine the role of baseline APRI score in detecting changes in HBV DNA viral load among chronic hepatitis B patients receiving one-year tenofovir therapy.

**Methods** : This study employed an observational retrospective cohort design. Data were obtained from the electronic medical records of adult chronic hepatitis B patients receiving tenofovir and undergoing follow-up at the Gastroenterohepatology Clinic of Dr. Sardjito General Hospital in 2023. Forty-nine patients met the inclusion and exclusion criteria. Variables collected included age, sex, HBeAg status, AST levels, platelet count, and HBV DNA viral load. Patients were categorized into two groups based on baseline APRI score ( $\geq 0.5$  and  $< 0.5$ ). The main outcome was a change in HBV DNA viral load from detectable to undetectable after one year of therapy. Bivariate analysis was performed using the Chi-square or Fisher's exact test, with a significance level set at  $p < 0.05$ . The optimal APRI cut-off value was determined using the Receiver Operating Characteristic (ROC) curve and further refined using the Youden index.

**Results** : A total of 49 patients were included in the analysis. Bivariate analysis showed no significant differences in age, sex, HBeAg status, or baseline HBV DNA viral load between the two groups. The optimal APRI cut-off value was 0.489 (AUC = 0.735;  $p = 0.006$ ), with a sensitivity of 78.9% and specificity of 70%, consistent with the generally accepted threshold of 0.5. A significant association was found between baseline APRI score and changes in HBV DNA viral load ( $p = 0.022$ ), with an odds ratio (OR) of 4.0 (95% CI: 1.19–13.47).

**Conclusion** : There is a significant relationship between baseline APRI score and changes in HBV DNA viral load among chronic hepatitis B patients treated with tenofovir for one year. Patients with baseline APRI  $\geq 0.5$  had a fourfold higher risk of persistent detectable HBV DNA after one year of therapy compared to those with APRI  $< 0.5$ .

**Keywords**: APRI, chronic hepatitis B, tenofovir, HBV DNA viral load