

**PERBEDAAN KONSENTRASI DNA VIRUS HEPATITIS B ANTARA
MUTASI PRECORE G1896A DAN BASAL CORE PROMOTER A1762T /
G1764A PADA PASIEN HEPATITIS B KRONIS**

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INTISARI

LATAR BELAKANG: Infeksi hepatitis B merupakan penyakit infeksi yang masih menjadi masalah kesehatan yang serius di seluruh dunia, terutama di negara berkembang seperti Indonesia. Indonesia adalah salah satu negara dengan tingkat endemisitas hepatitis B yang tinggi. Penelitian molekular mengenai hepatitis B menjadi penting karena banyak penelitian yang menyatakan bahwa mutasi sering terjadi pada proses perjalanan penyakit hepatitis B. Di antara mutasi yang paling sering terjadi pada kasus infeksi hepatitis B kronis adalah mutasi *precore* (PC) G1896A dan *basal core promoter* (BCP) A1762T / G1764A. Penelitian tentang perbedaan konsentrasi DNA virus hepatitis B (VHB) antara mutasi PC dan BCP belum banyak dilakukan dan masih perlu diteliti terutama pada populasi di Indonesia.

TUJUAN: Untuk mengetahui perbedaan konsentrasi DNA VHB antara mutasi PC G1896A dan BCP A1762T / G1764A pada pasien hepatitis B kronis.

METODE: Penelitian potong lintang terhadap DNA VHB dan data klinis pada 128 pasien hepatitis B kronis. DNA VHB dianalisis mutasinya dengan menggunakan metode *direct sequencing* dan konsentrasi DNA VHB diukur dengan metode *real time* PCR. Data DNA tersebut dibagi menjadi kelompok mutasi PC dan kelompok mutasi BCP. Data DNA dan data klinis kemudian dibandingkan dan dianalisis dengan menggunakan perangkat lunak SPSS dengan metode analisis statistik *independent sample t - test* dan *chi - square*.

HASIL: Analisis terhadap perbedaan rerata konsentrasi DNA antara mutasi PC (rerata konsentrasi DNA VHB = $2,75 \pm 0,48$ *log copies / ml*) dan BCP (rerata konsentrasi DNA VHB = $5,12 \pm 1,20$ *log copies / ml*) menghasilkan perbedaan yang signifikan dengan nilai $p = 0,001$.

KESIMPULAN: Penelitian ini menemukan perbedaan rerata konsentrasi DNA virus hepatitis B yang signifikan antara mutasi PC G1896A dan BCP A1762T / G1764A, dengan kelompok mutasi BCP memiliki rerata konsentrasi DNA yang lebih tinggi.

**DIFFERENCE OF HEPATITIS B VIRUS VIRAL LOAD BETWEEN
PRECORE G1896A MUTATION AND BASAL CORE PROMOTER A1762T
/ G1764A MUTATION IN PATIENTS WITH CHRONIC HEPATITIS B**

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ABSTRACT

BACKGROUND: Hepatitis B infection has been a serious health problem worldwide, especially in developing countries, including Indonesia. Indonesia is one of the countries which has high hepatitis B endemicity. The molecular study of hepatitis B virus (HBV) has become important because many studies showed that mutations frequently occur in the clinical course of hepatitis B infection. Precore (PC) G1896A mutation and basal core promoter (BCP) A1762T / G1764A mutation are the most frequent mutations found in chronic hepatitis B infection. There are few studies that have been conducted related to the difference of HBV viral load between PC and BCP mutations, therefore it is necessary to conduct study, especially in Indonesia population.

AIM: To investigate the difference of HBV viral load between PC G1896A mutation and BCP A1762T / G1764A mutation in chronic hepatitis B patients.

METHOD: A cross - sectional study involving hepatitis B DNA and clinical data of 128 chronic hepatitis B patients. Real time PCR was used to measure the viral load, and direct sequencing method was used to analyze the DNA mutation. Comparison of the DNA and clinical data was performed, subsequently categorized into two groups; PC mutation and BCP mutation. Data were analyzed by using SPSS software, and independent sample t - test and chi - square were performed for statistical analysis.

RESULT: Statistical analysis on difference of mean HB viral load between PC (mean HBV viral load = $2,75 \pm 0,48$ log copies / ml) and BCP mutation (mean HBV viral load = $5,12 \pm 1,20$ log copies / ml) found a significant difference ($p = 0,001$).

CONCLUSION: This study found a significant difference of HBV viral load mean between PC G1896A and BCP A1762T / G1764A mutations, in which BCP has the higher mean of viral load.