

**PERBEDAAN KADAR 25-HYDROXYVITAMIN D SERUM  
BERDASARKAN DERAJAT FIBROSIS HATI PADA  
PASIEN HEPATITIS VIRUS KRONIK**



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**ABSTRAK**

# PERBEDAAN KADAR 25-HYDROXYVITAMIN D SERUM BERDASARKAN DERAJAT FIBROSIS HATI PADA PASIEN HEPATITIS VIRUS KRONIK

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**Pendahuluan:** Hepatitis virus kronik dapat didefinisikan sebagai hepatitis virus yang berlangsung lebih dari 6 bulan yang diantaranya dapat disebabkan oleh hepatitis B dan C. Hepatitis B dan C mempunyai risiko berkembang menjadi infeksi kronik yang dapat menyebabkan fibrosis hati dan akhirnya berkembang menjadi sirosis hati dan kanker hati primer. Fibrosis hati terjadi akibat produksi berlebihan dan deposisi matriks ekstraseluler (MES) yang menyebar di hati. Derajat fibrosis hati dapat dinilai baik secara invasif (biopsi hati) maupun non-invasif (*Transient Elastography* atau *Fibroscan*). Beberapa penelitian menunjukkan bahwa kadar vitamin D yang rendah dalam sirkulasi dikaitkan dengan perkembangan fibrosis hati pada pasien dengan berbagai penyakit hati kronik. Vitamin D memiliki peranan antifibrotik pada sel stelata hati melalui penghambatan aktivitas TGF- $\beta$  pro-fibrotik/penekanan translokasi jalur pensinyalan *Suppressor of Mothers Against Decapentaplegic* (SMAD) sehingga dapat menghambat proses fibrosis hati. Penelitian ini bertujuan untuk menganalisis perbedaan kadar 25-hydroxyvitamin D serum berdasarkan derajat fibrosis hati pada pasien hepatitis virus kronik.

**Metode:** Penelitian ini merupakan suatu penelitian observasional analitik dengan pendekatan *cross-section* yang dilaksanakan di Poliklinik Gastroenterohepatologi RSUP Dr. M. Djamil Padang. Subjek penelitian yang sesuai dengan kriteria inklusi dan eksklusi berjumlah 88 sampel dipilih secara *consecutive sampling*. Dilakukan pemeriksaan kadar 25-hydroxyvitamin D serum menggunakan metode *enzyme-linked immunosorbent assay* (ELISA) dan *fibroscan*. Data dianalisis menggunakan uji komparatif *One Way ANOVA* untuk perbedaan kadar 25-hydroxyvitamin D serum berdasarkan derajat fibrosis hati.

**Hasil:** Penelitian ini mendapatkan hasil rerata kadar 25-hydroxyvitamin D pada pasien hepatitis virus kronik adalah 27,44 ( $\pm 11,88$ ) ng/ml, dengan rerata kadar 25-hydroxyvitamin D pada F0-F1, F2, F3 dan F4 masing-masingnya yaitu 40,43 ( $\pm 11,80$ ) ng/ml, 25,46 ( $\pm 9,23$ ) ng/ml, 24,10 ( $\pm 9,59$ ) ng/ml dan 19,76 ( $\pm 3,77$ ) ng/ml. Dilakukan uji *One Way ANOVA*, terdapat perbedaan rerata bermakna kadar 25-hydroxyvitamin D serum pada derajat fibrosis hati pasien hepatitis virus kronik F0-F1, F2, F3, dan F4 secara statistik dengan nilai  $p < 0,001$ .

**Kesimpulan:** Terdapat perbedaan yang bermakna secara statistik kadar 25-hydroxyvitamin D serum pada pasien hepatitis virus kronik dengan derajat fibrosis hati F0-F1 dengan F2, F0-F1 dengan F3, dan F0-F1 dengan F4.

**Kata Kunci:** 25-hydroxyvitamin D, fibrosis hati, hepatitis virus kronik, *transient elastography*

## ABSTRACT

### DIFFERENCES LEVEL OF 25-HYDROXYVITAMIN D SERUM BASED ON THE DEGREE OF LIVER FIBROSIS IN CHRONIC VIRUS HEPATITIS PATIENTS

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**Introduction:** Chronic viral hepatitis can be defined as viral hepatitis that lasts more than 6 months, which can be caused by hepatitis B and C. Hepatitis B and C have the risk of developing into a chronic infection which can cause liver fibrosis and ultimately develop into liver cirrhosis and primary liver cancer. Liver fibrosis occurs due to excessive production and diffuse deposition of extracellular matrix in the liver. The degree of liver fibrosis can be assessed both invasively (liver biopsy) and non-invasively (Transient Elastography or Fibroscan). Several studies have shown that low circulating levels of vitamin D are associated with the development of liver fibrosis in patients with various chronic liver diseases. Vitamin D has an antifibrotic role in liver stellate cells through inhibiting pro-fibrotic TGF- $\beta$  activity/suppressing the translocation of the Suppressor of Mothers Against Decapentaplegic (SMAD) signaling pathway so that it can inhibit the process of liver fibrosis. This study aims to analyze differences in serum 25-hydroxyvitamin D levels based on the degree of liver fibrosis in chronic viral hepatitis patients.

**Methods:** This research is an analytical observational study with a cross-section approach carried out at the Gastroenterohepatology Polyclinic of Dr. M. Djamil Padang hospital. The study subjects who met the inclusion and exclusion criteria were 88 samples selected by consecutive sampling. Serum 25-hydroxyvitamin D levels were examined using the enzyme-linked immunosorbent assay (ELISA) and fibroscan methods. Data were analyzed using the One Way ANOVA comparative test for differences in serum 25-hydroxyvitamin D levels based on the degree of liver fibrosis.

**Results:** This study found that the mean 25-hydroxyvitamin D level in chronic viral hepatitis patients was 27.44 ( $\pm$ 11.88) ng/ml, with the mean 25-hydroxyvitamin D levels in F0-F1, F2, F3 and F4 respectively being 40.43 ( $\pm$ 11.80) ng/ml, 25.46 ( $\pm$ 9.23) ng/ml, 24.10 ( $\pm$ 9.59) ng/ml and 19.76 ( $\pm$ 3.77) ng/ml. One Way ANOVA test was carried out, there was a statistically significant difference in the mean levels of 25-hydroxyvitamin D serum in the degree of liver fibrosis in chronic viral hepatitis patients F0-F1, F2, F3, and F4 with a p value <0.001.

**Conclusion:** There was a statistically significant difference in serum 25-hydroxyvitamin D levels in chronic viral hepatitis patients with degrees of liver fibrosis F0-F1 versus F2, F0-F1 versus F3, and F0-F1 versus F4.

**Keywords:** 25-hydroxyvitamin D, liver fibrosis, chronic viral hepatitis, transient elastography