

ABSTRACT

CORRELATION BETWEEN SERUM FERRITIN LEVELS AND LIVER STIFFNESS IN PATIENTS WITH BETA THALASSEMIA MAJOR AT DR. H. ABDUL MOELOEK GENERAL HOSPITAL BANDAR LAMPUNG

By

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Background: Beta thalassemia major is a hereditary blood disorder that requires patients to undergo repeated blood transfusions to maintain adequate hemoglobin levels. Continuous transfusions can lead to iron overload, which may cause organ damage, particularly hepatic fibrosis. Excess iron can be measured using serum ferritin levels. Serum ferritin concentration may serve as an indicator of iron overload in specific organs among thalassemia patients, as it reflects the total amount of stored body iron.

Methods: This study was an analytical observational study with a cross-sectional approach. Secondary data were obtained from medical records of patients with beta thalassemia major at Dr. H. Abdul Moeloek General Hospital during the period of January – October 2025. The variables examined were serum ferritin levels (ng/mL) and liver stiffness (kPa) measured using fibroscan. Statistical analysis was performed using the Spearman correlation test with a significance level of $p < 0,05$.

Results: A total of 34 patients medical records were included in this study, consisting of 11 (32,4%) males and 23 (67,6%) females. The median serum ferritin level was 4,949.34 ng/mL, and the median liver stiffness value was 7.25 kPa. The Spearman correlation test showed a significant correlation between serum ferritin levels and liver stiffness ($r=0.519$; $p=0.002$), indicating a positive correlation with moderate strength.

Conclusions: Serum ferritin levels are positively correlated with liver stiffness. This finding indicates that an increase in serum ferritin levels is associated with an increase in liver stiffness.

Keywords: beta thalassemia major, liver stiffness, serum ferritin, transient elastography

ABSTRAK

KORELASI KADAR SERUM FERRITIN DENGAN NILAI KEKAKUAN HATI PADA PASIEN TALASEMIA BETA MAYOR DI RSUD DR. H. ABDUL MOELOEK KOTA BANDAR LAMPUNG

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Latar Belakang: Talasemia beta mayor merupakan kelainan darah hereditas yang menyebabkan penderitanya memerlukan transfusi darah berulang untuk mempertahankan kadar hemoglobin yang cukup. Transfusi yang dilakukan terus-menerus dapat menyebabkan penumpukan zat besi (*iron overload*) yang berpotensi menimbulkan kerusakan organ, terutama hati, berupa fibrosis hati. Kelebihan zat besi ini dapat diukur dengan menggunakan kadar serum ferritin. Kadar serum ferritin dapat menjadi indikator kelebihan zat besi di suatu organ pada pasien talasemia karena mencerminkan jumlah zat besi yang disimpan dalam tubuh.

Metode: Penelitian ini merupakan penelitian analitik observasional dengan pendekatan *cross-sectional*. Data sekunder diperoleh dari rekam medis pasien talasemia beta mayor di RSUD Dr. H. Abdul Moeloek periode Januari – Oktober 2025. Variabel yang diteliti adalah kadar serum ferritin (ng/mL) dan nilai kekakuan hati (kPa) hasil pemeriksaan *fibroscan*. Analisis statistik dilakukan menggunakan uji korelasi Spearman dengan tingkat signifikansi $p < 0,05$.

Hasil: Sebanyak 34 data rekam medis pasien diikutsertakan dalam penelitian ini, terdiri atas 11 (32,4%) laki-laki dan 23 (67,6%) perempuan. Nilai median kadar serum ferritin adalah 4.949,34 ng/mL dan median nilai kekakuan hati 7,25 kPa. Hasil uji korelasi Spearman menunjukkan adanya korelasi bermakna antara kadar serum ferritin dengan nilai kekakuan hati ($r=0,519$; $p=0,002$) dengan arah hubungan positif dan kekuatan hubungan sedang.

Kesimpulan: Kadar serum ferritin berkorelasi secara positif dengan kekakuan hati. Hasil ini menunjukkan bahwa peningkatan kadar ferritin serum berhubungan dengan peningkatan kekakuan hati.

Kata Kunci: kekakuan hati, serum ferritin, talasemia beta mayor, *transient elastography*