HUBUNGAN ANTARA SATURASI TRANSFERIN DAN KADAR FERITIN DENGAN KADAR *INSULIN-LIKE GROWTH FACTOR*-1 PADA PASIEN TALASEMIA β MAYOR DEWASA

ABSTRAK

Latar belakang: Pasien talasemia β mayor membutuhkan transfusi seumur hidup. Pemberian transfusi dalam jangka panjang menyebabkan *iron overload* yang menimbulkan berbagai komplikasi salah satunya di hepar. Saturasi transferin dan feritin saat ini digunakan untuk menilai stasus besi dan menilai *iron overload*. *Insulin-like growth factor*-I merupakan mediator utama *Growth Hormone* yang diproduksi terutama di hepar. Penelitian ini bertujuan untuk mengetahui hubungan antara saturasi transferin dan kadar feritrin dengan kadar IGF-1 sebagai indikator kerusakan hepar pada pasien talasemia β mayor dewasa.

Tujuan: Membuktikan terdapat hubungan antara saturasi transferin dan kadar feritin dengan kadar IGF-1 pada pasien talasemia β mayor dewasa

Metode: Penelitian *cross-sectional* pada 40 pasien dewasa dengan talasemia β mayor di RSUP dr. Kariadi yang rutin mendapatkan transfusi darah. Kadar feritin dan IGF-1 serum diperiksa dengan *enzyme linked immunosorbent assay* (ELISA), kadar Fe dan TIBC diperiksa menggunakan alat *chemical analyzer* dan digunakan untuk mendapatkan nilai saturasi transferin. Hasil yang diperoleh dilakukan uji normalitas Shapiro-Wilk. Uji statistik menggunakan uji korelasi Pearson.

Hasil: Nilai rerata ±SB saturasi transferin dan kadar feritin adalah 54,04 ± 18,95 % dan 2491,6 ± 1272,5 ng/mL . Rerata ±SB nilai IGF-1 adalah 33,12 ± 12,31 ng/mL. Uji hubungan antara saturasi transferin dan kadar feritin dengan kadar IGF-1 berturut-turut didapatkan nilai p = 0,044 , r = -0,320 ; p = 0,730 , r = -0,056.

Simpulan: Terdapat hubungan negatif lemah antara saturasi transferin dengan kadar IGF-1. Tidak terdapat hubungan bermakna antara kadar feritin dengan kadar IGF-1

Kata kunci: Talasemia β mayor, saturasi transferin, feritin, IGF-1, *iron overload*

CORRELATION BETWEEN TRANSFERIN SATURATION AND FERITIN LEVEL WITH INSULIN-LIKE GROWTH FACTOR-1 IN ADULT WITH THALASSEMIA β MAJOR PATIENTS

ABSTRACT

Background: Thalassemia β major patients require lifelong transfusions. Long-term transfusion leads to iron overload, which causes various complications, one of which is in the liver. Transferrin and ferritin saturation are currently used to assess iron status and assess iron overload. Insulin-like growth factor-I is the main mediator of growth hormone, which is produced mainly in the liver. This study aims to determine the relationship between transferrin saturation and ferritin level with IGF-1 level as an indicator of hepatic damage in adult thalassemia β major patients.

Objective: To prove the relationship between transferrin saturation and ferritin level with IGF-1 level in adult thalassemia β major patients.

Method: This was a cross-sectional study in 40 adult patients with thalassemia β major at Dr. Kariadi Hospital, who routinely receive blood transfusions. Serum ferritin and IGF-1 level were examined by enzyme-linked immunosorbent assay (ELISA), and Fe and TIBC level were examined by a chemical analyzer, then a formula was added to calculate transferrin saturation values. The correlation between variables was analyzed by Pearson correlation test.

Results: The mean ± SD of transferrin saturation and ferritin level were 54.04 ± 18.95% and 2491.6 ± 1272.5 ng/mL. The mean ± SD of IGF-1 was 33.12 ± 12.31 ng/mL. The correlation test between transferrin saturation and ferritin level with IGF-1 level obtained $p = 0.044$, $r = -0.320$; $p = 0.730$, $r = -0.056$; respectively.

Conclusion: There is a weak negative relationship between transferrin saturation and IGF-1 level. There is no significant relationship between ferritin level and IGF-1 level.

Keywords: Thalassemia β major, transferrin saturation, ferritin, IGF-1, iron overload