Hubungan Feritin Serum dengan Kadar 25-Hidroksikolekalsiferol dan Kalsium Ion pada Pasien Thalassemia Mayor Anak Usia 7-12 Tahun = Correlation between Serum Ferritin and Levels of 25-Hydroxycholecalciferol and Ionized Calcium in Children with Thalassemia Major Aged 7-12 Years

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Abstrak

Latar belakang. Kelebihan zat besi akibat transfusi rutin pada penderita thalassemia mayor menyebabkan timbunan zat besi yang akan membuat kerusakan signifikan pada banyak organ, seperti hati dan kelenjar paratiroid, sehingga dapat mengganggu metabolisme vitamin D dan kalsium.
Tujuan. Mengetahui hubungan antara kadar feritin serum dengan kadar 25 (OH)D dan kalsium ion pada anak thalassemia mayor.
Metode. Penelitian ini adalah studi potong lintang yang dilakukan pada 64 anak thalassemia mayor usia 7-12 tahun dari bulan November hingga Desember 2020 di RS Dr. Cipto Mangunkusumo (RSCM). Feritin serum dan kalsium ion diperiksa di laboratorium patologi klinik RSCM. Pemeriksaan kadar vitamin D 25 (OH)D dengan metode Enzyme-Linked Fluorescent Assay (ELFA) dilakukan di Laboratorium Kalgen Innolab Jakarta.
Hasil. Dari 64 subjek, rerata feritin serum (SB) 5537.85 (2976.17) ng/mL, rerata serum vitamin D 25 (OH)D (SB) 15,556 (5,825) ng/mL dan rerata kalsium ion (SB) 1,144 (0,079) nmol/L. Sebanyak 6,3% subjek mengalami hipokalsemia. Defisiensi vitamin D ditemukan pada 34,4% subyek dan insufisiensi pada 45,3% subyek. Koefisien korelasi Pearson antara feritin serum dan vitamin D (r = -0,020, p = 0,873), dan untuk kalsium ion (r = 0,01, p = 0,938).
Kesimpulan. Hubungan antara feritin serum terhadap vitamin D dan kalsium ion tidak menunjukkan korelasi. Tingginya prevalens defisiensi vitamin D pada anak thalassemia mayor membutuhkan penanganan lebih komprehensif untuk meningkatkan kesehatan tulang, mencegah patah tulang dan potensi komplikasi terkait lainnya.
.....Background. Iron overload due to routine transfusions in thalassemia major children causes iron deposits that will make significant damage to many organs, such as the liver and parathyroid glands, so that can disrupting the vitamin D and calcium metabolism.
Objective. To determine the correlation between serum ferritin levels with 25
(OH)D levels and ionized calcium in thalassemia major children.
Methods. This study was a cross sectional study was conducted on 64 children with thalassemia major, aged 7-12 years, from November to December 2020 at Dr. Cipto Mangunkusumo (CMH). Serum ferritin and ionized calcium patients were examined in the laboratory of Dr. Cipto Mangunkusumo. Serum 25 (OH)D examination using the Enzyme-Linked Fluorescent Assay (ELFA) method was carried out at the Kalgen Innolab Jakarta Laboratory.
Results. From 64 subjects, mean serum ferritin (SD) 5537.85 (2976.17) ng/mL, mean serum vitamin D 25 (OH)D (SD) 15.556 (5.825) ng/mL and mean ionized calcium (SD) 1.144 (0.079) nmol/L. A total of 6.3% of subjects experienced hypocalcemia. Vitamin D deficiency was present in 34.4% of subjects and

insufficiency in 45.3% of subjects. Pearson’s correlation coefficient between serum ferritin and vitamin D ($r = -0.020$, $p = 0.873$), and for ionized calcium ($r = 0.01$, $p = 0.938$).
Conclusions. The association between serum ferritin and vitamin D and calcium ions showed no correlation. The high prevalence of 25 (OH)D deficiency in thalassemia major children requires further management to improve bone health, prevent fracture and other related potential complications.