

Hubungan Kadar Fibroblast Growth Factor-23 dalam Serum dengan Hipertrofi Ventrikel Kiri dan Fraksi Ejeksi Ventrikel Kiri pada Pasien Hemodialisis di Rumah Sakit Cipto Mangunkusumo = The Correlation between Fibroblast Growth Factor-23 Levels in Serum to Left Ventricle Hypertrophy and Left Ventricle Ejection Fractions among Hemodialysis Patients in Cipto Mangunkusumo Hospital

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Abstrak

Latar Belakang: Fibroblast Growth Factor-23 (FGF-23) merupakan penanda proses gangguan mineral tulang pada penyakit ginjal kronik dialisis. Peningkatan FGF-23 menyebabkan proses remodelling yang berkontribusi pada perkembangan hipertrofi ventrikel kiri (LVH) dan penurunan fraksi ejeksi ventrikel kiri (LVEF) secara langsung pada pasien hemodialisis masih kontroversi.

Tujuan: Mengetahui hubungan kadar FGF-23 dalam serum dengan hipertrofi

ventrikel kiri dan fraksi ventrikel kiri pada pasien hemodialisis regular.

Metode: Studi potong lintang terhadap 111 pasien hemodialisis regular dua kali seminggu di Rumah sakit Cipto Mangunkusumo Jakarta selama periode Juli sampai September 2023. Dilakukan Uji Mann Whitney dan Chi Square untuk menilai perbedaan serta hubungan kadar FGF-23 dengan hipertrofi ventrikel kiri (LVH) dan fraksi ejeksi ventrikel kiri (LVEF).

Hasil: Dari 111 subjek yang diikutsertakan pada analisis didapatkan median usia subjek yaitu 51 (37-61) tahun, kadar rerata iFGF-23 536,2 pg/ml (min-max 1358-2180,1). Didapatkan hasil echocardiography gambaran LVH sebesar 84,68% dan LVEF yang turun 10,81% . Didapatkan perbedaan (terbalik) kadar FGF-23 antara LVH dengan Tidak LVH (p value 0,003). Didapatkan hubungan (terbalik) kadar FGF-23 dengan LVH p value 0,010 PR (95%IK) 0,792 (0,663-0946). Tidak didapatkan perbedaan kadar FGF-23 antara yang mengalami penurunan LVEF dengan LVEF normal.

Kesimpulan: Terdapat perbedaan (terbalik) kadar FGF-23 antara hipertrofi ventrikel kiri dengan tidak hipertrofi ventrikel kiri namun tidak terdapat perbedaan kadar FGF-23 antara yang mengalami penurunan fraksi ejeksi ventrikel kiri dengan yang tidak mengalami penurunan fraksi ejeksi ventrikel kiri.

.....Background: Fibroblast Growth Factor-23 (FGF-23) is a marker that indicate the process of bone mineral disorders in chronic kidney disease dialysis. An elevated FGF-23 causes a remodeling process that contributes to the development of left ventricle hypertrophy (LVH) and the still controversial direct decline of left ventricle ejection fraction (LVEF) among hemodialysis patients.

Objective: To seek out the connection between FGF-23 levels in serum with left ventricle hypertrophy and left ventricle ejection fraction among regular hemodialysis patients.

Methods: It is a cross-sectional study conducted to 111 regular hemodialysis patients for twice a week in Cipto Mangunkusumo Hospital in Jakarta from July to September 2023. The Mann Whitney and Chi Square tests were subsequently used to evaluate the difference as well as the connection between FGF-23 levels with left ventricle hypertrophy (LVH) and left ventricle ejection fraction (LVEF).

Results: Of the 111 subjects included in the analysis, the median age of the subject was 51 (37-61) years, show an average level of iFGF-23 value at 536.2 pg/ml (min-max 1358-2180.1). Results obtained from the echocardiography images show that 84,68% had LVH Meanwhile, LVEF results of decline was 10,81%. There is a difference (reverse) in FGF-23 levels between patients with LVH and patients without LVH (p value 0.003). Furthermore, there is a correlation (reverse) between FGF-23 levels with LVH p value 0.010 PR (CI 95%) 0.792 (0.663-0.946). Nonetheless, there is no difference between the levels of FGF-23 between subjects who experienced LVEF decline and those who did not experience LVEF normal.

Conclusion: There is a difference (reverse) in FGF-23 levels between subjects with LVH and those without LVH. However, there is no difference in FGF-23 levels among those who experienced left ventricle ejection fraction (LVEF) decline and those who did not experience LVEF decline.