

## INTISARI

**Latar Belakang:** Prevalensi kalsifikasi vaskular meningkat seiring dengan memburuknya fungsi ginjal, 80–90% pada pasien penyakit ginjal tahap akhir (PGTA), Peningkatan kadar FGF-23 dikaitkan dengan kalsifikasi vaskular, Pemeriksaan foto polos abdomen posisi lumbal lateral dapat digunakan untuk mengetahui kalsifikasi vaskular aorta abdominal.

**Tujuan Penelitian:** Mengetahui korelasi antara FGF-23 dan kalsifikasi vaskular aorta abdominalis pada pasien dialisis peritoneal (CAPD).

**Metode Penelitian :** Studi *Cross Sectional* dilakukan pada 39 pasien CAPD yang menjalani foto polos abdomen posisi lumbal lateral untuk menilai skor kaupilla pada bulan September 2025. Variabel bebasnya adalah FGF-23 dan variabel terikatnya adalah derajat kalsifikasi vaskular.

**Hasil :** Proporsi subyek laki-laki 20(51,3%) dan perempuan 19(48,7%) rerata usia  $40,28 \pm 10,14$  tahun. 33(84.6%) subyek menunjukkan kalsifikasi vaskuler, kalsifikasi ringan 22(56.4%), sedang 10(25,6%), Berat 1(2,6%), tidak ada Kalsifikasi 6(15.4%). penyebab PGK karena DM 9(23.1%), Hipertensi 32(82,1%), 13(33,3%) subyek merokok. Rerata indeks massa tubuh (IMT)  $23,77 \pm 3,89$  kg/m<sup>2</sup>. median durasi CAPD 38(8-171) bulan. Median Skore Kaupilla 1(0-19), median Kadar FGF-23 25,35(2,54-114,34)pg/ml, median kadar Kalsium 2,35(1,65–9,14) mmol/L, rerata kadar Fosfat  $5,06 \pm 1,65$  mg/dL, median kadar Kalium 3.3 (0.03-5.6), rerata kadar albumin  $3,69 \pm 0,48$  g/dL, rerata BUN  $44,87 \pm 13,18$  mg/dL, rerata kreatinin  $13,33 \pm 3,54$  mg/dL, terdapat korelasi positif antara IMT, fosfat dan kalium dengan kadar FGF-23. Kadar FGF-23 berkorelasi positif sedang dengan tingkat kalsifikasi vaskular( $r$ ) 0,403( $p=0,006$ ). Analisis multivariat regresi linier menunjukkan kadar FGF-23 dan usia merupakan prediktor independen signifikan terhadap peningkatan derajat kalsifikasi vaskular, sementara variabel lain seperti durasi CAPD, IMT, BUN, kreatinin, dan GDS tidak menunjukkan hubungan bermakna secara multivariat. Nilai Cut off FGF-23 sebesar 38,57 pg/ml.

**Simpulan:** Kadar FGF-23 berhubungan secara independen dengan kalsifikasi aorta pada pasien PD.

### **Kata Kunci:**

FGF-23 serum, Kalsifikasi aorta abdominalis, Dialisis Peritoneal

## ABSTRACT

**Background:** The prevalence of vascular calcification (VC) increases with worsening kidney function, reaching 80–90% in patients with end-stage renal disease (ESRD). Elevated FGF-23 levels were associated with vascular calcification. A lateral abdominal radiograph can be used to detect abdominal aortic vascular calcification.

**Objective:** To determine the correlation between FGF-23 and abdominal aortic vascular calcification (VC) in peritoneal dialysis (CAPD) patients.

**Methods:** A cross-sectional study was performed in 39 PD patients who underwent lumbale lateral X-ray to assess for VC in September 2025. The independent variable was FGF-23 and the dependent variable was degree of vascular calcification.

**Results:** The proportion of male subjects were 20(51.3%) and female subjects 19(48.7%) with an average age of  $40.28 \pm 10.14$  years. 33(84.6%) subjects showed vascular calcification, mild calcification 22(56.4%), moderate 10(25.6%), severe 1(2.6%), no calcification 6(15.4%). The cause of CKD was DM 9(23.1%), hypertension 32(82.1%), 13(33.3%) subjects smoked. The average body mass index (BMI) was  $23.77 \pm 3.89$  kg/m<sup>2</sup>. The median duration of CAPD was 38(8-171) months. Median Kaupilla Score 1(0-19), median FGF-23 level 25.35 (2.54-114.34) pg/ml, median Calcium level 2.35 (1.65–9.14) mmol/L, mean Phosphate level  $5.06 \pm 1.65$  mg/dL, median Potassium level 3.3(0.03-5.6), mean Albumin level  $3.69 \pm 0.48$  g/dL, mean BUN  $44.87 \pm 13.18$  mg/dL, mean Creatinine  $13.33 \pm 3.54$  mg/dL, there was a positive correlation between BMI, phosphate and potassium with FGF-23 levels. FGF-23 levels were positively correlated with the level of vascular calcification ( $r$  0,403 ( $p=0,006$ )). Multivariate linear regression analysis showed that FGF-23 levels and age were significant independent predictors of increased vascular calcification. However, other variables, such as CAPD duration, BMI, BUN, creatinine, and GDS, did not show a significant association in multivariate analysis. FGF-23 cut off value is 38.57 pg/ml

**Conclusions:** FGF-23 levels were independently associated with aortic calcification in PD patients.

**Keywords:**

Serum FGF-23, aortic abdominal calcification, peritoneal dialysis (PD)