

**ABSTRAK**

**ASOSIASI KADAR KALSITRIOL DENGAN KADAR HORMON  
PARATIROID INTAK PADA PASIEN PENYAKIT GINJAL KRONIK  
NON DIALISIS**

**Sebuah penelitian analisis *cross-sectional*  
Di Poliklinik Ginjal Hipertensi Instalasi Rawat Jalan RSUD Dr Soetomo  
Surabaya**

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**Latar Belakang :** Penyakit Ginjal Kronik (PGK) berkaitan dengan proses gangguan mineral dan tulang. Proses tersebut akan mengakibatkan terjadinya hiperparatiroid sekunder. Hiperparatiroid sekunder akan menyebabkan kalsifikasi vaskuler yang berkaitan dengan peningkatan morbiditas dan mortalitas penyakit kardiovaskuler. Pada gangguan mineral dan tulang terjadi gangguan keseimbangan kalsium dan fosfat yang mempengaruhi beberapa biomarker pada PGK diantaranya adalah kadar kalsitriol dan hormon paratiroid. Bagaimana peran kalsitriol terhadap hiperparatiroid sekunder pada penyakit ginjal kronik non dialisis saat ini masih belum jelas.

**Tujuan Penelitian :** Mengetahui asosiasi antara kadar kalsitriol dengan kadar HPT intak pada pasien PGK non dialisis.

**Metode :** Pada penelitian ini didapatkan 62 pasien PGK di Poliklinik Ginjal Hipertensi Instalasi Rawat Jalan RSUD Dr. Soetomo. Kriteria inklusi adalah umur lebih dari 18 tahun, belum pernah menjalani dialisis akan diikutkan penelitian dan menandatangani *informed consent*. Kriteria eksklusi adalah pasien yang mendapat terapi pengikat fosfat dan vitamin D analog dalam 3 bulan terakhir, keganasan, penyakit hati kronis. Pemeriksaan serum kalsitriol dan HPT intak. Kadar kalsitriol diukur menggunakan metode *Enzymeimmunoassay* (EIA) dan kadar HPT intak diukur menggunakan metode *Electro-chemiluminescence immunoassay* (ECLIA). Hasil dianalisis dengan uji Pearson's jika distribusi sampel merata atau uji Spearman jika distribusi sampel tidak merata.

**Hasil :** Jumlah sampel 62 pasien PGK non dialisis 53 (85,5%) laki-laki dan 9 (14,5%). Pasien dengan kadar kalsitriol rendah 8 pasien dan kadar kalsitriol normal 54 pasien. Nilai median kalsitriol 59,4 pmol/l (45-59 ml/m), 65,2 pmol/l (30-44 ml/m), 66,2 pmol/l (15-29 ml/m), 60,1 pmol/l (< 15 ml/m). Nilai median HPT 59,3 pg/ml (45-59 ml/m), 56,4 (30-44 ml/m), 92,1 (15-29 ml/m), 162,6 (< 15 ml/m).

**Kesimpulan :** pada penelitian kami didapatkan hubungan tidak bermakna antara kadar kalsitriol dengan kadar HPT intak pada pasien PGK non dialisis dengan  $p < 0,107$  and  $r spearman -0,207$ .

**Kata Kunci :** *gangguan mineral dan tulang, penyakit ginjal kronik, penyakit kardiovaskular,,1,25(OH)<sub>2</sub> vitamin D<sub>3</sub>(kalsitriol), kalsium, fosfat*

**ABSTRACT**

**ASSOCIATION OF CALCITRIOL WITH INTACT PARATHYROID HORMON ON PRE-DIALYSIS PATIENTS**

*An analysis of cross-sectional study  
Polyclinic of Kidney and Hypertension Soetomo Hospital Surabaya*

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**Background:** Chronic Kidney Disease (CKD) is associated with the process of mineral bone disorders that the process can lead to the occurrences of secondary hyperparathyroidism. Secondary hyperparathyroidism is the cause of vascular calcification, and thus it is associated with the increased of morbidity and mortality of cardiovascular disease. The occurrences of mineral and bone disorders on CKD (CKD-MBD) affect multiple biomarkers of CKD; two of which are calcitriol and parathyroid hormone. However, the role of calcitriol to secondary hyperparathyroidism on pre-dialysis patients is not yet determined.

**Objective:** To identify the association of the calcitriol levels and parathyroid hormone levels on pre-dialysis patients.

**Methods:** 62 pre-dialysis patients at Polyclinic of Kidney and Hypertension, Soetomo Hospital, Surabaya are involved in this study. That patients are not older than 18 years of age, patients never have dialysis, patients sign informed consent are the inclusive criteria. The subject are excluded if they have already had the therapy of fosfate binders and vitamin D analogue in the past 3 months, as well as if found chronic liver disease and malignancy. This study use the measurement of serum calcitriol and parathyroid hormone. Calcitriol levels measured by Enzymeimmunoassay (EIA) and iPTH levels measured by Electrochemiluminescence immunoassay (ECLIA) methode. Pearson's Test is applied if the distribution of samples occurs in equal numbers, in contrast, Spearman's Test in equal numbers.

**Results:** The results of this study showed 4 various stage 3a (45-59 ml/m), 3b (30-44 ml/m), 4 (15-29 ml/m), 5 (<15 ml/m) of patients with CKD. The median values of calcitriol: 59,4 pmol/l (stage 3a), 65,2 pmol/l (stage 3b), 66,2 pmol/l (stage 4), 60,1 pmol/l (stage 5). The median values of parathyroid hormone: 59,3 pg/ml (stage 3a), 56,4 (stage 3b), 92,1 (stage 4), 162,6 (stage5).

**Conclusion:** The association of calcitriol with parathyroid hormone on pre-dialysis patients is not significant with  $p < 0,107$  and  $r$  spearman  $-0,207$ .

**Keywords:** mineral and bone disorders, chronic kidney disease, cardiovascular disease, 1,25 dihydroxy vitamin D (calcitriol), calcium, phosphate