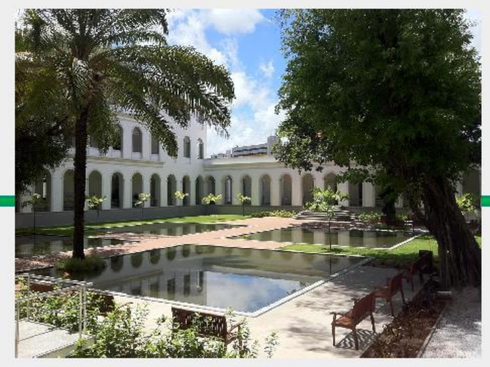
HYPOVITAMINOSIS D IN NONDIALYZED CHRONIC KIDNEY DISEASE PATIENTS: A CROSS SECTION STUDY

Rodrigo Amblard Wanderley, Luisa Queiroga de Oliveira Ferreira, Tatiana Cristina Manzi Sena, Tatiana Ribeiro Valério, José Edevanilson de Barros Gueiros, Ana Paula Santana Gueiros

Instituto de Medicina Integral Professor Fernando Figueira (IMIP)
Nephrology Division
Recife – Pernambuco – Brazil



BACKGROUND

Hypovitaminosis D is well documented in patients with chronic kidney disease (CKD) and has been associated with poor outcome even in the earlier stages of the disease. This condition should not be a problem in a tropical country which has abundant solar exposure.

OBJECTIVE

This study aimed to evaluate the prevalence of hypovitaminosis D in an outpatient population with CKD on conservative treatment from a nephrology clinic in northeastern Brazil and check the factors associated with this insufficiency and deficiency.

METHODS

This cross-sectional study included 270 patients with CKD at stages 2 to 5 within 4 years (jan/2010 to dec/2013). Were evaluated as the characteristics of gender (51.9% male), age (64.1 ± 16.5 years), creatinine clearance estimated by the Cockroft-Gault formula (GFR: 30.8 ± 14.1 mL/minute) and etiologic diagnosis (diabetes 35,2%, hypertension 30%, glomerulonephritis 5.9%, other 21.9%, unspecified 7%). Serum 25-hydroxyvitamin D [25-(OH)D] was measured by chemiluminescent microparticle immunoassay, and we analyzed the clinical and laboratorial variables related to patients with adequate levels of 25-(OH)D (> 30ng/mL) and hypovitaminosis D (≤ 30ng/ml). The following laboratory parameters were measured: calcium (Ca), phosphorus (P) and intact parathyroid hormone (iPTH).

RESULTS

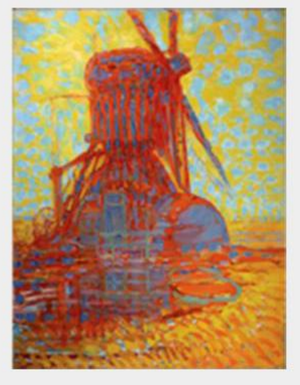
Hipovitaminosis D was observed in 56.7% of patients, 51.5% had insufficiency (15 to 30ng/ml) and 5.2%, deficiency (<15ng/ml). The risk factors for hypovitaminosis D were female gender (odds ratio: 1.77; 95% CI: 1.05 to 2.96; p=0.030), diabetes (odds ratio: 3.31; 95% CI: 1.84 to 5.96; p<0.001), GFR<30mL/minute (odds ratio: 1.75; 95% CI: 1.04 to 2.93; p=0.033). The table below shows the comparative analysis of the groups.

	Hypovitaminosis D		
	Yes	No	p-value
Age (years)	66.67 ± 16.21	60.83 ± 16.41	0.004 *
25-(OH)D (ng/mL)	22.93 ± 5.08	38.67 ± 7.21	< 0.001 *
GFR (mL/min)	28.76 ± 13.62	33.41 ± 14.29	0.004 **
iPTH (pg/mL)	162.12 ± 133.22	129.29 ± 120.04	0.003 **
P (mg/dL)	3.76 ± 0.81	3.55 ± 0.67	0.024 *
Ca (mg/dL)	9.29 ± 0.93	9.26 ± 0.65	0.743 *

Results expressed in mean ± standard deviation.
(*) Teste t Student (**) Teste de Mann-Whitney.

CONCLUSIONS

Hypovitaminosis D is highly prevalent among patients with nondialyzed CKD, even in a tropical country. Diabetes, female gender and poor GFR are risk factors for hypovitaminosis D. Hypovitaminosis D is associated with worse mineral and bone disease profile.



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RODRIGO AMBLARD WANDERLEY
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