

SECONDARY HYPERPARATHYROIDISM IN HIV PATIENTS AND ITS RELATION TO CARDIOVASCULAR RISK FACTORS

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OBJECTIVES

Low level of vitamin D can result in secondary hyperparathyroidism (SH) that has been linked to increased cardiovascular risk in general population.

However, the spectrum of cardiovascular risk associated with SH in HIV-infected adults remains uncertain.

Our main aim was to determine its potential association with different markers of cardiovascular risk in HIV-infected adults.

METHODS/DESIGN

Cross-sectional study. Clinical data related to obesity, blood pressure, glucose metabolism, lipid profile, toxics use and renal function were recorded.

Hypovitaminosis D was defined by 25-hydroxy vitamin D level <30 ng/mL. SH was defined by parathyroid hormone >65 pg/mL in presence of hypovitaminosis D.

Patients were divided into three groups according to status of vitamin D and the presence of SH: A) SH and hypovitaminosis D; B) Hypovitaminosis D without SH and C) Vitamin D sufficient.

RESULTS

104 HIV patients were included. Prevalence of hypovitaminosis D and SH were 53.8% and 13.5% respectively.

Quantitatively, all parameters related to cardiovascular risk, except fasting glycaemia, were higher among patients of group A, but only levels of total cholesterol, LDL, and triglycerides reached significant difference. Also, prevalence of obesity (BMI ≥ 30 Kg/m²) was higher in patients that developed SH (group A) when compared to group B and C (table 1).

In multivariate analysis, SH was not associated with any cardiovascular risk factor.

Table 1: Epidemiologic, clinical data and laboratory profile according to vitamin D status and secondary hyperparathyroidism

	All patients n = 104	Group A (SH and hypovitaminosis D) n = 14	Group B (Hypovitaminosis D without SH) n = 42	Group C (Vitamin D sufficient) n = 48	p
Gender (male)	87.5 %	78.6 %	88.1 %	89.6 %	0.54 ^a
Age (years)	43.4 ± 9.6	44.1 ± 5.4	44.9 ± 7.1	41.8 ± 12.1	0.30 ^b
25-hydroxy vitamin D (ng/mL)	30.6 ± 13.6	18.2 ± 6.2	22.3 ± 4.4	41.7 ± 12.4	<0.001 ^b
i-PTH (pg/mL)	48.1 ± 19.2	82.7 ± 12.3	41.1 ± 11.2	44.1 ± 13.2	<0.001 ^b
Serum calcium (mg/dL)	9.7 ± 0.4	9.4 ± 0.4	9.7 ± 0.4	9.7 ± 0.3	0.04 ^b
Serum phosphorus (mg/dL)	3 ± 0.5	3.1 ± 0.7	2.9 ± 0.5	3 ± 0.5	0.65 ^b
HCV co-infection	56.7 %	42.8 %	57.1 %	60.4 %	0.50 ^a
Current smokers	60.6 %	50 %	71.4 %	54.1 %	0.17 ^a
Alcohol	32.7 %	28.6 %	30.9 %	35.4 %	0.85 ^a
Type 2 diabetes mellitus	8.6 %	0 %	9.5 %	10.4 %	0.46 ^a
BMI ¹ (Kg/m ²)	25.2 ± 4.7	25.9 ± 4.7	25.7 ± 5.9	24.5 ± 3.4	0.44 ^b
BMI ≥30 Kg/m ²	12.5 %	28.6 %	19 %	2.1 %	0.004 ^a
Systolic blood pressure (mm Hg)	121.6 ± 14.9	128.1 ± 18.7	120.9 ± 13.6	120.3 ± 14.5	0.21 ^b
Diastolic blood pressure (mm Hg)	77.9 ± 8.5	81 ± 8.9	77.5 ± 9.5	77.3 ± 8.5	0.34 ^b
Fasting serum glucose (mg/dL)	98 ± 19.3	88.1 ± 7.3	103.1 ± 21.3	96.5 ± 18.7	0.03
HbA1c (%)	5.6 ± 0.7	5.6 ± 0.5	5.6 ± 0.7	5.6 ± 0.7	0.87 ^b
Uric acid (mg/dL)	5.4 ± 1.5	5.8 ± 1.1	5.5 ± 1.8	5.2 ± 1.2	0.32 ^b
Total cholesterol (mg/dL)	184.9 ± 43.1	220.5 ± 46.2	175.7 ± 43.1	182.4 ± 37.2	0.002 ^b
HDL-cholesterol (mg/dL)	49.7 ± 17.6	49.8 ± 17.6	52.5 ± 20.7	47 ± 14.1	0.34 ^b
LDL-cholesterol (mg/dL)	114.3 ± 38.3	142.2 ± 39.8	104.8 ± 38.8	114.6 ± 33.5	0.006 ^b
Triglycerides (mg/dL)	148.1 ± 79	209.5 ± 95.3	135.2 ± 78.7	141.4 ± 66.8	0.006 ^b
Albumin/creatinine ratio (mg/g)	14.7 ± 8.1	19.5 ± 11.8	10.7 ± 3.6	15.4 ± 8	0.09 ^b

a) from X² test; b) from ANOVA test; 1) Body Mass Index

CONCLUSIONS

- Though HIV-infected patients with SH due to hypovitaminosis D have worse cardiovascular risk profile, we can not conclude that SH is independently associated with major risk factors.
- Nevertheless, we think these patients require a tighter monitoring of lipid profile, blood pressure and renal function.
- Further studies will be useful to clarify the role of SH in determining unfavourable cardiovascular outcomes in HIV population.

