

ADMINISTRATION OF A SINGLE, LARGE ORAL DOSE OF 25-HYDROXYCHOLECALCIFEROL IN HEMODIALYSIS PATIENTS: EFFECTS ON THE MINERAL METABOLISM MARKERS.

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Introduction: Vitamin D deficiency is common in patients with chronic kidney disease and dialysis, low levels have been associated with increased cardiovascular risk, and mortality.

We evaluated the administration of a high and single, oral dose of 25-OHcolecalciferol (3 mg of Hidroferol®, 180,000 UI) Serum levels of D vitamine and mineral metabolism markers have been analyzed.

Material and methods: Chronic hemodialysis patients with 25(OH) D < 30ng/ml were included.

Patients with serum calcium > 10 mg/dl or PTH > 800 pg/ml were excluded.

The patients were randomized in two groups: treated group and controlled group. Time follow-up was 16 weeks.

The usual treatment for controlling Ca/P levels neither the dialysis bath (calcium of 2.5 mEq/L) were modified.

86 patients ended the study, 42 patients in treated group and 44 in controlled group.

Results:

	TREATED GROUP (n=42)						
	Basal	1 week	2 weeks	4 weeks	8 weeks	12 weeks	16 weeks
Serum calcium (mg/dl)	8,7±0,8	9,2±1 ***	9,1±0,9***	9±0,9*	9±0,8**	8,9±0,8	8,8±0,6
Serum phosphate (mg/dl)	4,4±1,2	4,7±1,3*	4,8±1,4*	4,9±1,3**	4,9±1,3**	4,6±1,5	4,5±1,3
PTH (pg/ml)	302±154	200±142 ***	218±129 ***	229±138**	243±161*	267±168	315±228
25(OH)D (ng/ml)	17,5±8,3	307,8±132,2***	112±43,8 ***	74±21,5 ***	47,6±20,6 ***	32,5±11,2 ***	24,2±9,9 ***
	CONTROL GROUP (n=44)						
	Basal	1 week	2 weeks	4 weeks	8 weeks	12 weeks	16 weeks
Serum calcium (mg/dl)	8,6±0,5	8,6±0,5 (c)	8,5±0,6 (b)	8,5±0,6 (b)	8,5±0,8 (b)	8,6±0,7 (a)	8,6±0,7
Serum phosphate (mg/dl)	4,8±1,6	4,9±1,4	4,7±1,3	4,5±1,5	5±1,5	4,9±1,5	4,8±1,5
PTH (pg/ml)	328±159	324±176 (c)	347±150 (c)	328±181 (b)	348±174 (b)	349±187 (a)	350±194
25(OH)D (ng/ml)	18,1±7,4	17,6±9,1 (c)	20,4±9 * (c)	21,1±9,3 *** (c)	25,6±12,5 *** (c)	20,7±8,2 *** (c)	19,5±7,8 (a)

* p<0,05; ** p<0,01; *** p<0,001 (compared to baseline)

a (<0,05); b (p<0,01); c (p<0,001) (compared to treated group data)

The levels of 25(OH) D were even bigger in the treated group than in the controlled one.

Serum calcium was > 10 mg/dl in 16 of 252 (6%) performed samples in the treated group and only 1 of 264 (0.4 %) samples were over 10 in the controlled group.

Only two cases in the treated group showed serum calcium > 10.5 mg/dl.

There were no differences between both groups neither in phosphorous level nor in number of samples with serum phosphorous > 5.5 mg/dl.

Conclusions

An isolated dose of 3 mg of 25-Hidroxycholecalciferol keeps enough levels of 25(OH) D with a decreased level of PTH for three months.

The dose seems secure but the correction of 25(OH) D levels and their potentially beneficial effects require long-term follow-up studies.

