

Cholecalciferol supplementation for Vitamin D deficiency on dialysis patients

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Introduction and Aims

- Vitamin D deficiency is a common and important consequence of Chronic Kidney Disease (CKD) on patients under renal replacement therapy. Many studies have analyzed vitamin D replacement with cholecalciferol in hemodialysis (HD) patients, however there is not an optimal treatment scheme established.
- Therefore the aim of our study is to determine the safety and response of oral dosing regimen with cholecalciferol for different levels of Vitamin D deficiency.

Methods

- We measured at the beginning of the study and 3 months later, 25 hydroxy Vitamin D (25 OH D) levels on 118 adult patients under dialysis along with calcium, phosphorous, parathormone (PTHi) and alkaline phosphatase. Concomitant hyperparathyroidism treatment was registered.
- The patients were divided in 3 groups according to their 25 (OH) D levels and treated as followed: < 15 ng/ml with 100.000 UI of cholecalciferol every 15 days for 1 month, then 100.000 per month for 3 months. 16-30 ng/ml with 100.000 UI per month for 3 month; and for >30ng/ml with 100.000 every 3 months. Statistical analyses were performed with SPSS.

Results

•68% of the patients were male, mean age 57.4 ±19 years. Mean level of 25 (OH) D was 22.4±8 ng/ml at the beginning of the study and 29.8 ± 8 ng/ml after supplementation (p<0,0001). There was a significant difference between calcium, phosphorus, alkaline phosphatase and PTHi at the beginning and the end of the study (p <0,0001) for the overall patients (Table 1). When analyzed each treated group separately at the beginning and at the end the only variable that remained significantly different was Vitamin D, except for the group with more than 30ng/ml 25 (OH) D at the beginning of the study.

	0 months	3 months	significance
Calcium mg/dl	9.1±0.8	8.75±0.8	0,0001
Phosphorus mg/dl	5,07±1.4	5,3±1.6	0,0001
Alkaline phosphatase mg/dl	129±100	140±128	0,0001
PTHi	666±550	642±629	0,0001
25 (oh) D ng/ml	22,4±8,8	29,8±8	0,0001

Conclusions

•The scheme proposed was safe and showed a significant increase of Vitamin D levels. If 25 (OH) D levels are higher than 30 ng/ml then 100.000 UI of cholecalciferol every three months should be considered as maintenance therapy.