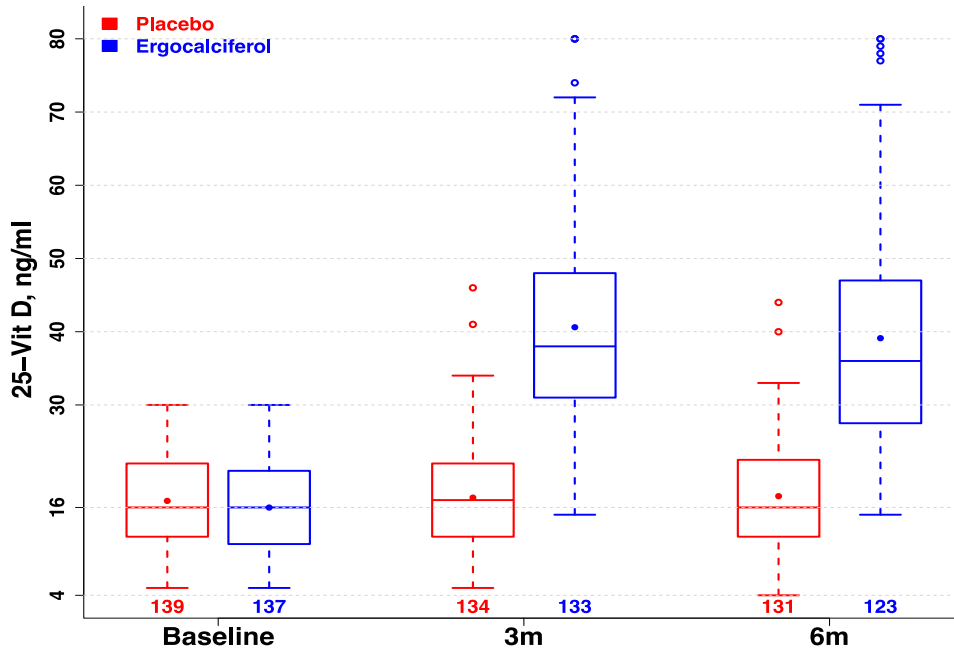


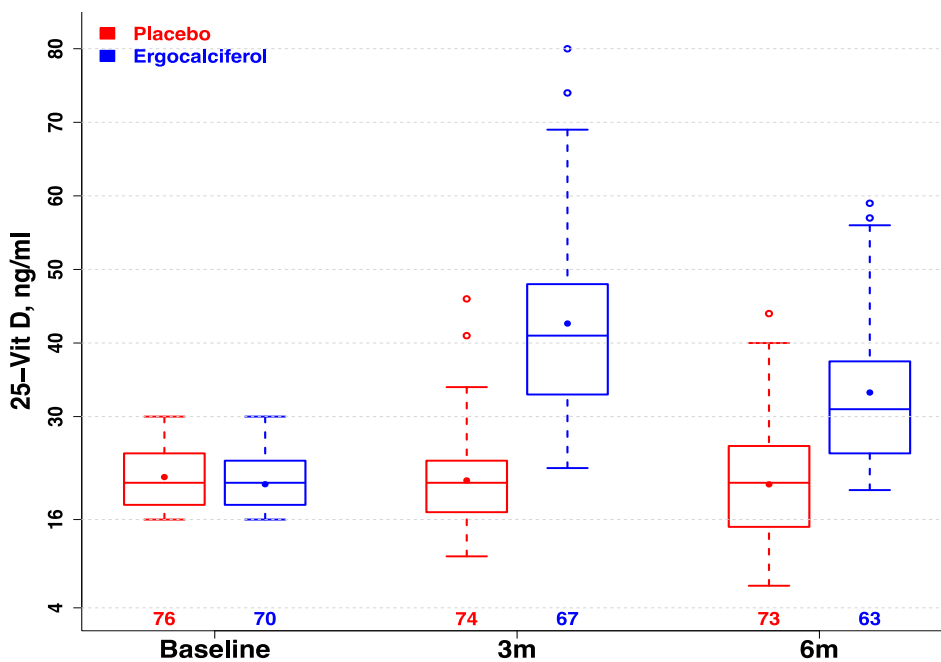
SUPPLEMENTARY APPENDIX

Supplementary Figure 1: Serum 25(OH)Vitamin D Level Over Time Across Randomized Groups By Strata of Baseline 25(OH)Vitamin D Level 1A) Total Study Population 1B) Baseline Serum 25(OH)Vitamin D 16-30 ng/ml and 1C) Baseline Serum 25(OH)Vitamin D ≤ 15 ng/ml.

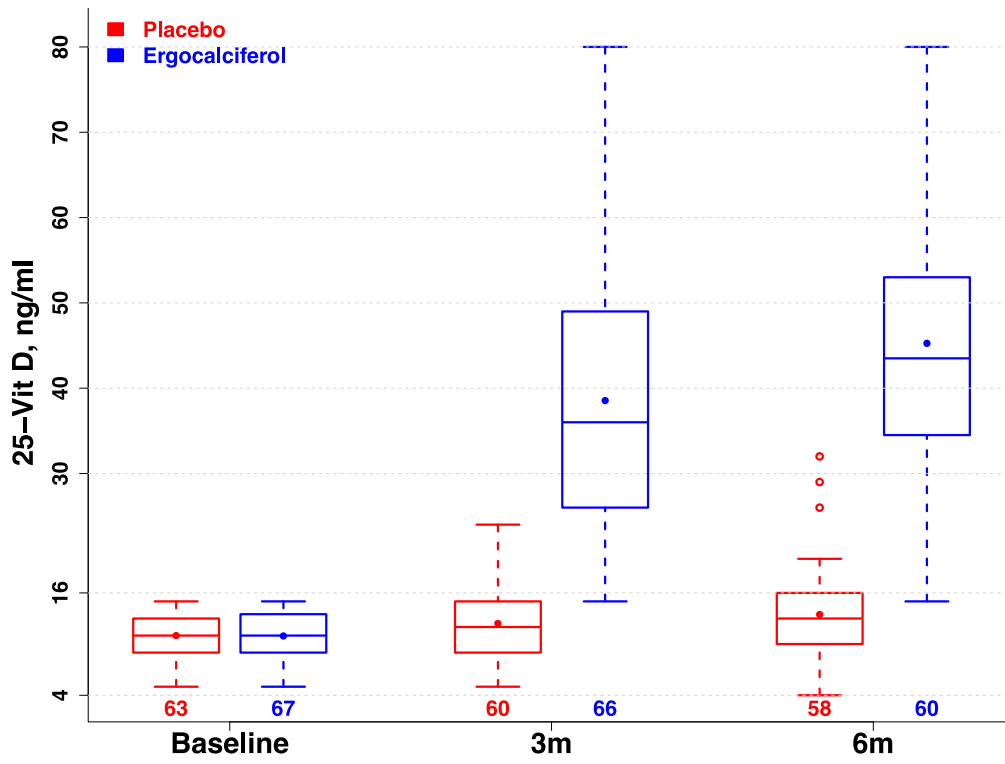
1A Full Study Population



1B Subgroup with Baseline Serum 25(OH)Vitamin D 16-30 ng/ml



1C 1B Subgroup with Baseline Serum 25(OH)Vitamin D ≤ 15 ng/ml



Supplementary Table 1: Change in Epoetin Dose in Subjects Who Achieved Vs. Did not Achieve 25(OH)Vitamin D_≥30 ng/ml at 3 or 6 months

We analyzed the EPO dose across strata defined by achieving Vs. not achieving serum 25(OH)D _≥30 ng/ml 1) at 3 months and 2) at 3 or 6 months. 107 subjects had serum 25(OH)D _≥30 ng/ml at 3 months and 117, at 3 or 6 months and these were compared with the patients who did not at the respective timepoint.

Change in EPO Dose in Subjects Who Achieve Vs. Don't Achieve 25Vit D_≥30 ng/ml at 3 months

Parameter	Achieved VitD _≥ 30 ng/ml at 3 months					Did Not Achieve Vit D _≥ 30 ng/ml at 3 months					Btwn Group p value [§]
	Baseline Value	Month 3 Value	Month 6 Value	Model Slope * (95% CI)	Within Group p-value ‡	Baseline Value	Month 3 Value	Month 6 Value	Model Slope* (95%CI)	Within Group p-value ‡	
Epoetin Dose units/week	6000 (3100,12000)	6100 (3000,10000)	8000 (3000,15000)	0.98 [^] (0.54, 1.02)	0.26	5000 (2000,11800)	6000 (2000,11500)	7000 (2000,13000)	1.00 [^] (0.96,1.05)	0.99	0.46

Change in EPO Dose in Subjects Who Achieve Vs. Don't Achieve Baseline 25Vit D_≥30 ng/ml at 3 or 6 months

Parameter	Achieved VitD _≥ 30 ng/ml at 3 or 6 months					Did Not Achieve Vit D _≥ 30 ng/ml at 3 or 6 months					Btwn Group p value [§]
	Baseline Value	Month 3 Value	Month 6 Value	Model Slope * (95% CI)	Within Group p-value ‡	Baseline Value	Month 3 Value	Month 6 Value	Model Slope* (95%CI)	Within Group p-value ‡	
Epoetin Dose units/week	5800 (3000,11600)	6000 (2600,9800)	7500 (2800,16000)	0.98 [^] (0.94, 1.02)	0.46	5200 (2200,12000)	6000 (2000,11550)	6000 (2000,12000)	1.00 [^] (0.96,1.05)	0.98	0.46

[^] The model slope is the change (95% confidence interval) in a given parameter per month. For non-normally distributed parameters, labeled with [^], the natural log of the variable was modeled and the interpretation is the percent change per month. For example a β of 0.98 for log Epoetin is interpreted as a 2% decrease in epoetin dose per month

Results are not different from the primary 'intent-to-treat' analysis shown in Table 2 of the manuscript, in which there is no difference in the change in Epoetin across treatment arms with treatment with Ergocalciferol vs. Placebo.

Handling of Missing Epogen

Of 7629 patient-weeks of observation, 177 (2.3%) were missing. The primary way we handled missing EPO weeks, per the methods, was to carry the last value forward if the absence was <2 weeks, and if longer than 2 weeks, it was left as missing. By these rules, very few patients missed months of Epogen, as shown in the Table.

	BL	1	2	3	4	5	6
Placebo	139	138	136	135	134	131	130
Ergocalciferol	137	136	135	134	132	129	122

Of the 9 patients in the placebo arm who were missing EPO data in month 6, 4 of these were deaths and 5 were for 'other unspecified reasons'. Of the 15 missing EPO in month 6 in the Ergo arm, 4 were deaths, 1 was a transplant, and 1 was a transfer to a non-participating unit, 9 were for 'other reasons'. Overall this is a small amount of missing data.

We also conducted sensitivity analyses, handling EPO in 2 additional ways

- 1) For all missing epoetin values, regardless of the duration of missingness, carry the last value forward
- 2) Leave all missing epoetin values as missing

Results are no different when we handled EPO missing in these 3 ways, as shown below. We have added this discussion to the Supplementary Appendix.

Supplementary Table2: Results of Mixed Models using 3 different ways of handling Missing Epoetin

Version	Definition of Missing Epoetin	Ergocalciferol		Placebo		Between Group p value
		Model Slope (95% CI)	Within Group p value	Model Slope (95% CI)	Within Group p value	
1 (Shown in the manuscript)	≤2 weeks absence last value carried forward; >2 weeks set to missing	0.99 (0.95, 1.03)	0.68	0.98 [^] (0.94, 1.02)	0.42	0.78
2	Last value carried Forward	0.98 (0.94, 1.03)	0.45	0.98 (0.94, 1.03)	0.44	1.00
3	Left as missing	0.99 (0.95, 1.03)	0.58	0.99 (0.95, 1.03)	0.74	0.87

Supplementary Table 3: Antihypertensive Medication Use Over the Course of the Study By Treatment Arm

	Baseline (N = 276)	Group A (N = 139, 50.4%)	Group B (N = 137, 49.6%)	P
BP medications				
No	66 (24%)	30 (22%)	36 (26%)	0.361
Yes	210 (76%)	109 (78%)	101 (74%)	
Number of BP medications				
-0-	66 (24%)	30 (22%)	36 (26%)	0.889
-1-	58 (21%)	31 (22%)	27 (20%)	
-2-	56 (20%)	30 (22%)	26 (19%)	
-3-	51 (18%)	26 (19%)	25 (18%)	
>=4	45 (16%)	22 (16%)	23 (17%)	
	Month 1 (N = 274)	Group A (N = 138, 50.4%)	Group B (N = 136, 49.6%)	P
BP medications				
No	67 (25%)	31 (22%)	36 (27%)	0.420
Yes	206 (75%)	107 (78%)	99 (73%)	
Number of BP medications				
-0-	67 (25%)	31 (22%)	36 (27%)	0.909
-1-	58 (21%)	32 (23%)	26 (19%)	
-2-	56 (21%)	28 (20%)	28 (21%)	
-3-	49 (18%)	25 (18%)	24 (18%)	
>=4	43 (16%)	22 (16%)	21 (16%)	
	Month 2 (N = 271)	Group A (N = 137, 50.6%)	Group B (N = 134, 49.4%)	P
BP medications				
No	66 (24%)	30 (22%)	36 (27%)	0.341
Yes	205 (76%)	107 (78%)	98 (73%)	
Number of BP medications				
-0-	66 (24%)	30 (22%)	36 (27%)	0.874
-1-	59 (22%)	31 (23%)	28 (21%)	
-2-	57 (21%)	30 (22%)	27 (20%)	
-3-	47 (17%)	23 (17%)	24 (18%)	
>=4	42 (16%)	23 (17%)	19 (14%)	
	Month 3 (N = 269)	Group A (N = 135, 50.2%)	Group B (N = 134, 49.8%)	P

BP medications				
No	66 (25%)	30 (22%)	36 (27%)	0.376
Yes	203 (75%)	105 (78%)	98 (73%)	
Number of BP medications				
-0-	66 (25%)	30 (22%)	36 (27%)	0.923
-1-	58 (22%)	30 (22%)	28 (21%)	
-2-	58 (22%)	31 (23%)	27 (20%)	
-3-	46 (17%)	23 (17%)	23 (17%)	
>=4	41 (15%)	21 (16%)	20 (15%)	
	Month 4 (N = 265)	Group A (N = 133, 50.2%)	Group B (N = 132, 49.8%)	P
BP medications				
No	63 (24%)	28 (21%)	35 (27%)	0.265
Yes	200 (76%)	105 (79%)	95 (73%)	
Number of BP medications				
-0-	63 (24%)	28 (21%)	35 (27%)	0.812
-1-	57 (22%)	31 (23%)	26 (20%)	
-2-	58 (22%)	31 (23%)	27 (21%)	
-3-	45 (17%)	22 (17%)	23 (18%)	
>=4	40 (15%)	21 (16%)	19 (15%)	
	Month 5 (N = 259)	Group A (N = 132, 51.0%)	Group B (N = 127, 49.0%)	P
BP medications				
No	60 (23%)	26 (20%)	34 (27%)	0.177
Yes	199 (77%)	106 (80%)	93 (73%)	
Number of BP medications				
-0-	60 (23%)	26 (20%)	34 (27%)	0.408
-1-	55 (21%)	30 (23%)	25 (20%)	
-2-	55 (21%)	33 (25%)	22 (17%)	
-3-	48 (19%)	22 (17%)	26 (20%)	
>=4	41 (16%)	21 (16%)	20 (16%)	
	Month 6 (N = 255)	Group A (N = 131, 51.4%)	Group B (N = 124, 48.6%)	P
BP medications				

No	55 (22%)	23 (18%)	32 (26%)	0.109
Yes	200 (78%)	108 (82%)	92 (74%)	
Number of BP medications				
-0-	55 (22%)	23 (18%)	32 (26%)	0.356
-1-	62 (24%)	36 (27%)	26 (21%)	
-2-	50 (20%)	29 (22%)	21 (17%)	
-3-	47 (18%)	22 (17%)	25 (20%)	
>=4	41 (16%)	21 (16%)	20 (16%)	