

THE EFFECT OF PARICALCITOL ON DIALYSATE PROTEIN LOSS IN PERITONEAL DIALYSIS PATIENTS

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INTRODUCTION AND OBJECTIVES

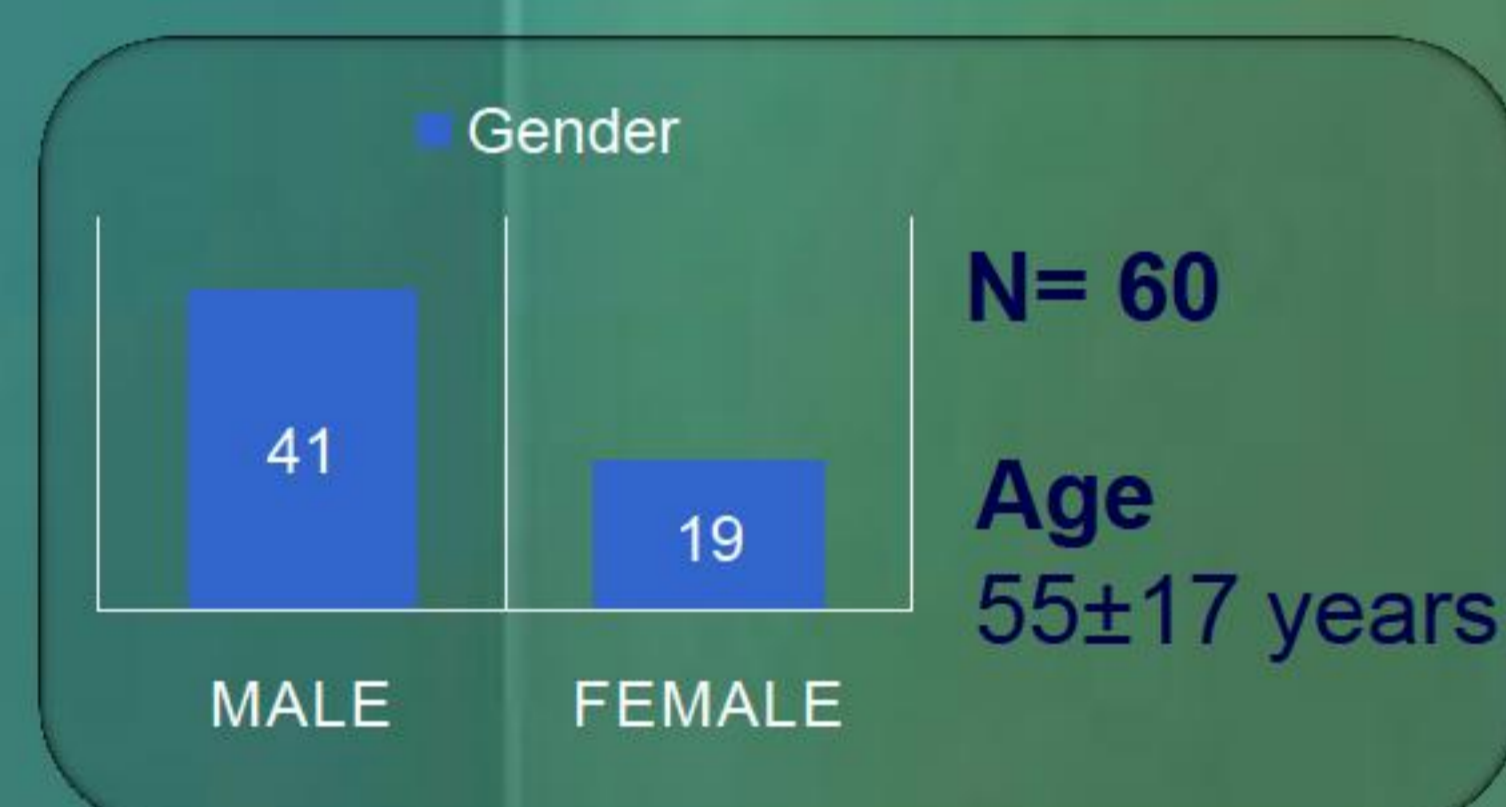
Ever since peritoneal dialysis (PD) has been used in the treatment of chronic kidney disease (CKD), high peritoneal protein loss has been observed on each PD exchange. In adult patients, the loss has been estimated at 6 to 13 g daily. Paricalcitol, a selective activator of vitamin D receptors (VDR), is successfully used as a treatment of hyperparathyroidism secondary to CKD. In addition, it has been proposed for reducing proteinuria in patients with CKD. Nonetheless, little is known about its effect on peritoneal protein loss (PPL) in patients on PD, namely after the identification of VDR on the peritoneal membrane. The aim of this study was to examine the effect of paricalcitol on PPL in PD patients.

METHODS

In a cross-sectional study we included patients stable on PD for a minimum period of three months. The patients were divided into two groups. Group 1 (G1) was treated with paricalcitol at least for three months. Group 2 (G2) did not receive treatment with paricalcitol. Clinical and laboratory data were collected from all patients at the time of peritoneal protein loss analysis. In statistical analysis Student's t-test, Chi-square test and Linear Regression Model were used.

RESULTS

Population



Diabetes	26.6%
Charlson CI	5±3
PD vintage	20.3±19.6 months
APD	50%

Laboratory analysis

D/P creatinine	0.7±0.1
RRF (mL/min)	5.8±3.0
Albumin (g/dL)	3.4±3.8
nPNA (g/kg/dia)	0.92±0.42
RCP (mg/L)	7.9±15.4
PPL (g/24h)	6.28±1.95

Transport status

Low	Low -average	High -average	High
1.7%	20.0%	56.7%	8.3%

Treatment

ACEIs/ARBs (63.3%)	9.3±10.3 months
Paricalcitol	8.8±7.5 months

Comparison between groups

	Without Paricalcitol	With Paricalcitol	
Age (years)	58.3±15.0	51.6±18.3	ns
Gender (M/F)	18/12	23/7	ns
Diabetes (%)	56.8	31.3	ns
Charlson CI	5.3±2.8	4.7±2.5	ns
RRF (mL/min)	4.9±2.7	6.5±3.2	ns
Albumin (g/dL)	3.8±5.2	3.0±0.5	ns
nPNA (g/kg/dia)	0.89±0.44	0.95±0.40	ns
RCP (mg/L)	9.9±20.3	6.0±8.2	ns
PPL(g/24h)	6.99±1.86	5.57±1.81	*
ACEIs/ARBs (months)	7.7±8.9	11.0±11.4	ns

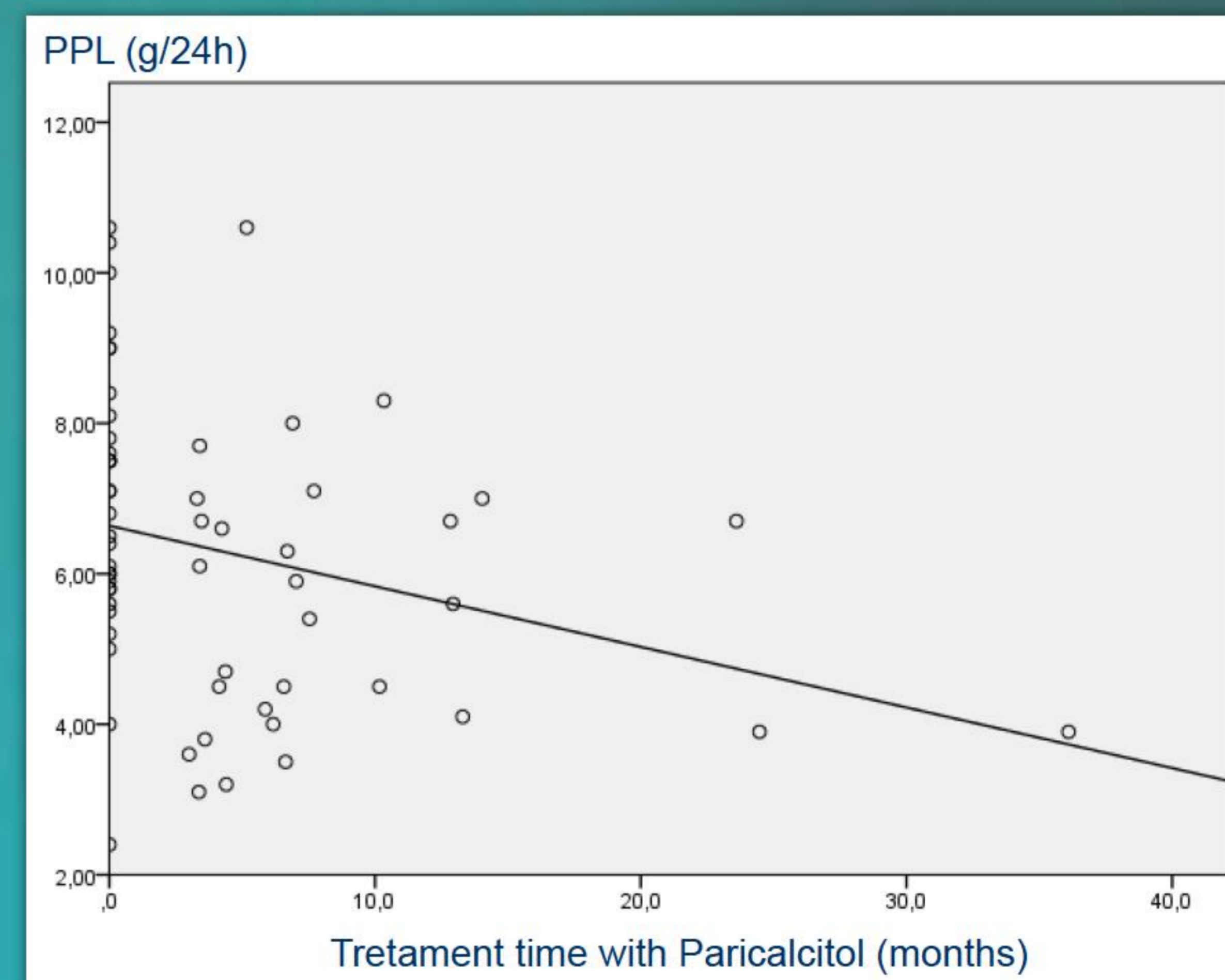
*p= 0,004

	CAPD	APD	
PPL (g/24h)	6.48±2.20	6.09±1.67	ns

	Low	Low-average	High-average	High	
PPL (g/24h)	4.10	5.99±1.84	6.71±1.99	5.92±1.19	ns

		ACEIs/ARBs		Total	ns
Paricalcitol		No	Yes		
No	12 (20%)	18 (30%)	30		
Yes	10 (16.7%)	20 (33.3%)	30		
Total	22 (36.7%)	38 (63.3%)	60		

Predictors factors for PPL



- Treatment time with Paricalcitol (p=0.038)
- Diabetes (p= 0.003)

adjusted for:

- PD modality
- type of transporter
- RCP
- Treatment time with ACEIs/ARBs.

Charlson CI – Charlson Comorbidity Index; APD – Automated Peritoneal Dialysis; CAPD – continuous ambulatory Peritoneal Dialysis D/P – dialysate/plasma ratio; RRF- residual renal function; RCP – reactive C protein; nPNA - normalized protein nitrogen appearance; PPL – Peritoneal Protein Loss; angiotensin-converting enzyme inhibitors (ACEIs)/angiotensin II receptor blockers (ARBs); ns – non significant.

CONCLUSIONS

In this study, treatment with paricalcitol was independently associated with lower peritoneal protein loss in chronic peritoneal dialysis patients. Prospective controlled studies, with greater number of patients, comparing paricalcitol with placebo are needed to confirm the effect of paricalcitol on peritoneal protein loss.

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