

Focused Phosphorus Management Program Decreases Hyperphosphataemia in End Stage Renal Disease Patients

Tracy J. Mayne, PhD^{*1}; Steve Wilson, PhD¹; Carey Colson, MS¹; Kathy Ricketts, MS, RD, LDN²
(1) DaVita Clinical Research, Minneapolis, MN; (2) Shire Pharmaceuticals, Chesterbrook, PA

INTRODUCTION

End stage renal disease (ESRD) causes dysregulation of bone and mineral metabolism, including an increase in serum phosphorus. KDOQI guidelines recommend maintaining phosphorus levels between 3.5 and 5.5 mg/dL. A focused phosphorus management program was designed with the aim of improving the proportion of patients achieving this target. The program supports patients with their diet and phosphorus management through in-center educational materials, as well as direct-to-patient adherence communications. It also includes education and access support specific to adherence to lanthanum carbonate.

METHODOLOGY

- This was a prospective, multi-center, single arm study examining markers of bone and mineral metabolism before and after implementation of an intervention to improve phosphorus outcomes. The level of analysis was the facility.
- Facilities were enrolled between January 2009 and November 2009 (Table 1).
- The interventions are described.
- The change in percentage of patients at a facility who achieved serum phosphorus ≤ 5.5 mg/dL was determined using pre-dialysis serum samples tested using an Olympus 5400.
- Changes over time were tested with a repeated measures general linear model. Statistical significance was set at $p < 0.05$.
- A planned comparison of the final pre-intervention month (-6) with the final post-intervention month (month 6) was conducted for each measure.

RESULTS

Phosphorus Management Program Interventions

- Staff in-service training on hyperphosphatemia including diet, dialysis, and phosphate binder therapy
- Regular monitoring of phosphorus with patient
- Renal diet and phosphorus binder education for all patients
- Additional options offered to patients prescribed lanthanum carbonate:
 - Medication (lanthanum carbonate) access support including benefit verification and prior authorization
 - Direct to patient communication program covering topics on managing diet and lanthanum carbonate-specific adherence support
 - Renal nurse direct-to-patient call center

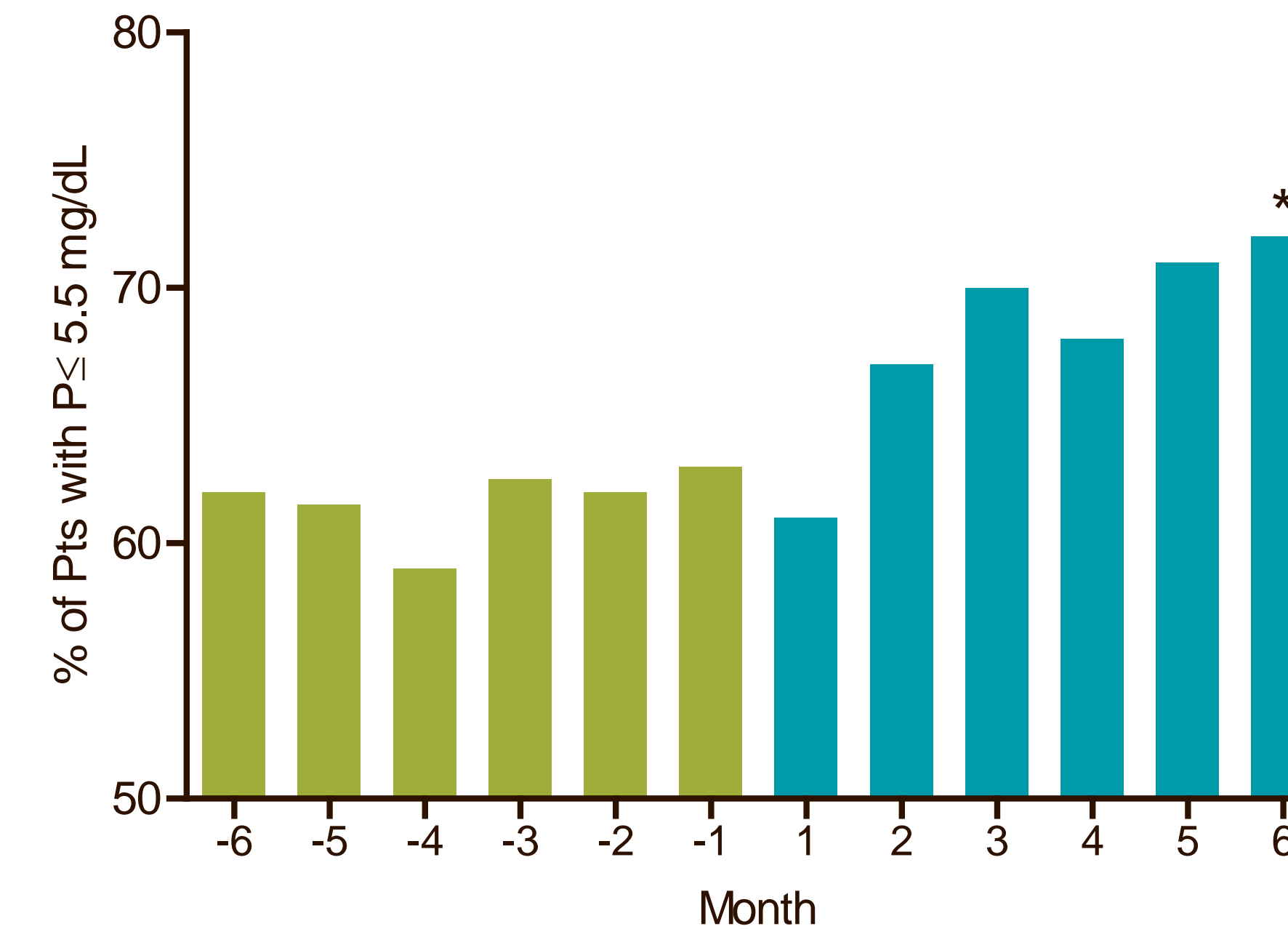


Figure 1. Percent of Patients with Serum Phosphorus Controlled Before and After Intervention, * $p < 0.01$ compared to month -6.

Table 1. Demographic Information by Facility

Center	State	N	Gender (%)			Age		Race (%)				Diabetic	Dialysis Vintage ^c		BMI	
			Male	mean	SD	White	Black	Hispanic	API ^a	UK ^b	%	mean	SD	mean	SD	
1	NJ	75	43%	64	16	43%	49%	3%	3%	3%	71%	3.0 ± 4.2	27 ± 6			
2	CA	91	54%	62	15	7%	0%	84%	9%	1%	78%	4.2 ± 3.4	26 ± 7			
3	GA	87	44%	63	14	37%	60%	2%	1%	0%	85%	3.0 ± 2.9	28 ± 7			
4	IL	75	61%	60	14	4%	23%	73%	0%	0%	75%	3.0 ± 2.5	26 ± 6			
5	FL	83	61%	59	15	42%	51%	5%	2%	0%	68%	2.5 ± 2.9	29 ± 8			
6	TX	82	65%	61	14	37%	49%	9%	0%	6%	68%	4.0 ± 3.9	29 ± 7			
7	NJ	68	68%	64	13	38%	46%	2%	2%	13%	84%	4.1 ± 5.1	27 ± 6			
8	PA	141	55%	58	15	0%	93%	2%	1%	4%	60%	3.1 ± 3.2	28 ± 7			
All		88	23	56%	61	15	23%	50%	21%	2%	3%	72%	3.3 ± 3.6	28 ± 7		

^aAPI, Asian / Pacific Islander; ^bUK, Unknown; ^cDialysis Vintage is defined as years on dialysis at DaVita

SUMMARY of RESULTS

- There was a significant increase in the percent of center patients achieving KDOQI phosphorus goals (mean increase from month -6 to month 6 = 9.2% ± 6.5%; $p < 0.01$; Figure 1).
- These results indicate that a focused phosphorus management program targeting both staff and patients can significantly improve patient outcomes.

KEY LEARNINGS

- ✓ The focused phosphorus management program improved serum phosphorus goal attainment compared to baseline.
- ✓ A larger randomized controlled study is planned.

We thank the patients who participated in this study and DaVita Clinical Research® for support in preparing this poster. DCR is committed to advancing the knowledge and practice of kidney care.

*Correspondence: tracy.mayne@davita.com
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