

Use and Outcomes for Oral Vitamin D Preparations Used in Peritoneal Dialysis Patients

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INTRODUCTION

Oral vitamin D agent use for patients on peritoneal dialysis (PD) varies by prescriber preference. However, little is known about the relative differences between achieved outcomes for those patients between agents. We utilized an electronic health record to understand the comparative effectiveness between products in a peritoneal dialysis (PD) population.

METHODOLOGY

- Patients were included in the analysis if they were on continuous ambulatory PD (CAPD), continuously cycling PD (CCPD), or intermittent PD in March of 2010 with the following criteria:
 - > age 18 as of the end of the month, at least one treatment in the month,
 - on dialysis for at least 90 days, at least 1 of the lab tests below within the last 90 days, and
 - an open order for one (and only one) oral vitamin D preparation during the month.
- Oral medication records were reviewed and the predominantly prescribed oral vitamin D was used to categorize patients into calcitriol, doxercalciferol, and paricalcitol groupings. Demographic characteristics of each group were generated.
- Propensity score matching was then performed for the three different agents. Relevant bone and mineral outcomes for each group as of March 2010 were compared.

RESULTS

Table 1. Patients Demographics

Mean ± SD	Calcitriol	Doxercalciferol	Paricalcitol
N	1897	2262	2298
Age (yr)	56.2 ± 15.0	54.5 ± 14.8	54.7 ± 14.8
% Male	53.2%	53.3%	49.6%
<i>Race and Ethnicity</i>			
% African American	28.9%	30.5%	32.2%
% Hispanic	13.0%	19.6%	11.5%
% Asian, Pacific Islander	5.2%	6.7%	4.2%
% Native American	2.2%	0.5%	0.4%
% Unknown	0.0%	0.0%	0.0%
% Diabetic	60.1%	59.9%	59.8%
Vintage (yr)	3.6 ± 3.6	3.7 ± 3.3	3.0 ± 2.9
BMI	28.9 ± 6.8	29.0 ± 6.7	28.9 ± 6.4

Table 2. Lab Outcomes by Vitamin D Preparations

Oral Vitamin D Preparations	Albumin ≥3.5 g/dL	PTH 150-600 pg/mL	Calcium 8.5-10.2 g/dL	Calcium ≥10.2 g/dL	Phosphorus ≤5.5 mg/dL
Calcitriol	68.1%	70.0%	80.9%	3.5%	66.4%
Doxercalciferol	67.4%	70.3%	80.7%	3.6%	66.5%
Paricalcitol	70.0%	71.8%	83.4%	3.9%	64.5%
p-value	NS	NS	NS	NS	NS

SUMMARY of RESULTS

- Demographic characteristics for patients using the various preparations were not significantly different (Table 1).
- 1,372 patients were included in each group following the propensity score analysis.
- In those patients, lab outcomes for each oral agent are listed in Table 2.
- MBD-related outcomes, including albumin, PTH, calcium and phosphorus levels showed no between-group differences.

KEY LEARNINGS

- ✓ Using a propensity-matched groups of PD patients, use of the three predominant oral vitamin D preparations have equal comparative effectiveness for key MBD outcomes.
- ✓ This data suggests that, for the purposes of the FDA labeled indication, any one of these agents can be used.
- ✓ While this data uses advanced statistical techniques, a randomized prospective trial is needed.

We express our sincere appreciation to the teammates in our nearly 1600 clinics who work every day not only to take care of patients but also to ensure the extensive data collection on which our work is based. We thank DaVita Clinical Research® for support in preparing this poster. DCR is committed to advancing the knowledge and practice of kidney care.

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American Society of Nephrology RenalWeek 2010, Denver, CO