

Differences in Mineral and Bone Disorder Protocol Usage and Outcomes in Alternative Dialytic Modalities

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INTRODUCTION

A growing number of dialysis patients are choosing alternative therapies compared with standard in-center 3x/wk hemodialysis treatment (ICHD). These therapies include peritoneal dialysis (PD), home hemodialysis (HHD) and in-center 3x/wk nocturnal hemodialysis (NHD). While conventional ICHD patients benefit from standardized mineral and bone disorder (MBD) protocols used by dialysis care teams, MBD treatment for patients on alternative modalities may be more disparate. We compared the dialysis care team practices in the alternative therapies and correlated protocol use with MBD outcomes.

METHODOLOGY

- A registered dietitian (RD) at every facility within a large dialysis organization (LDO) was asked to complete an online survey about MBD practices in ICHD patients in March 2009 and a similar survey, modified for alternative therapy dialysis patients in September 2009 (Table 1).
- Preliminary analyses revealed that patterns of responses were similar for NHD and ICHD, so analyses were conducted comparing proportions for in-center with at-home modalities using Chi-square tests.
- PD MBD facility outcomes were compared using a weighted scoring system that provides an MBD score for each facility that increases as a greater percentage of patients achieve KDOQI-recommended ranges.
- Facilities were grouped by protocol use and compared by students t-test.

RESULTS

Table 1. Demographics by Modality

Mean ± SD	PD	HHD	NHD	ICHD
N	8,685	1,796	941	91,054
Age (yr)	55.4±15.1	52.7±14.1	51.4±12.6	61.2 ± 15.0
% Male	51.9%	65.7%	69.4%	55.4%
<i>Race and Ethnicity</i>				
% African American	27.9%	27.8%	42.5%	38.8%
% Hispanic	14.4%	5.0%	12.1%	16.6%
% Asian, Pacific Islander	5.5%	2.8%	3.5%	3.8%
% Native American	1.1%	0.5%	0.6%	1.5%
% Unknown	0.0%	0.0%	0.0%	0.1%
% Diabetic	34.3%	27.3%	38.2%	45.2%
Vintage (yr)	3.2±3.2	4.3±4.6	4.8±4.0	3.9±3.6
BMI	28.5±6.6	28.7±7.5	31.2±8.9	27.6±7.1

- 1137 surveys were completed in the ICHD survey (75% response rate).
- 1287 surveys were completed in the alternative therapy survey (82% response rate) with 601 facilities reporting provision of 1 or more alternative therapies.

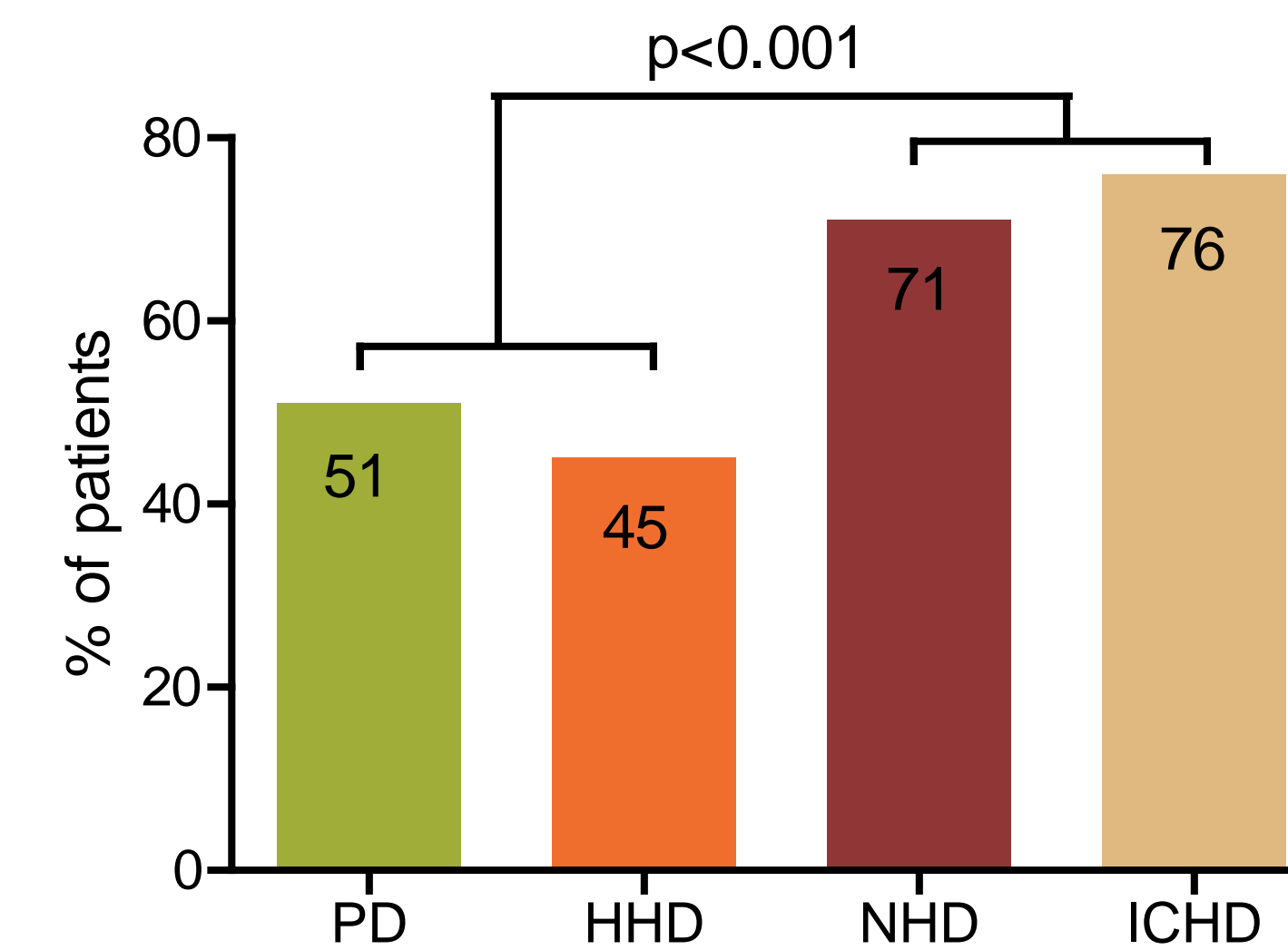


Figure 1. Facilities Managing MBD Outcomes with a standardized, evidence-based, physician-ordered protocol, by Dialytic Modality

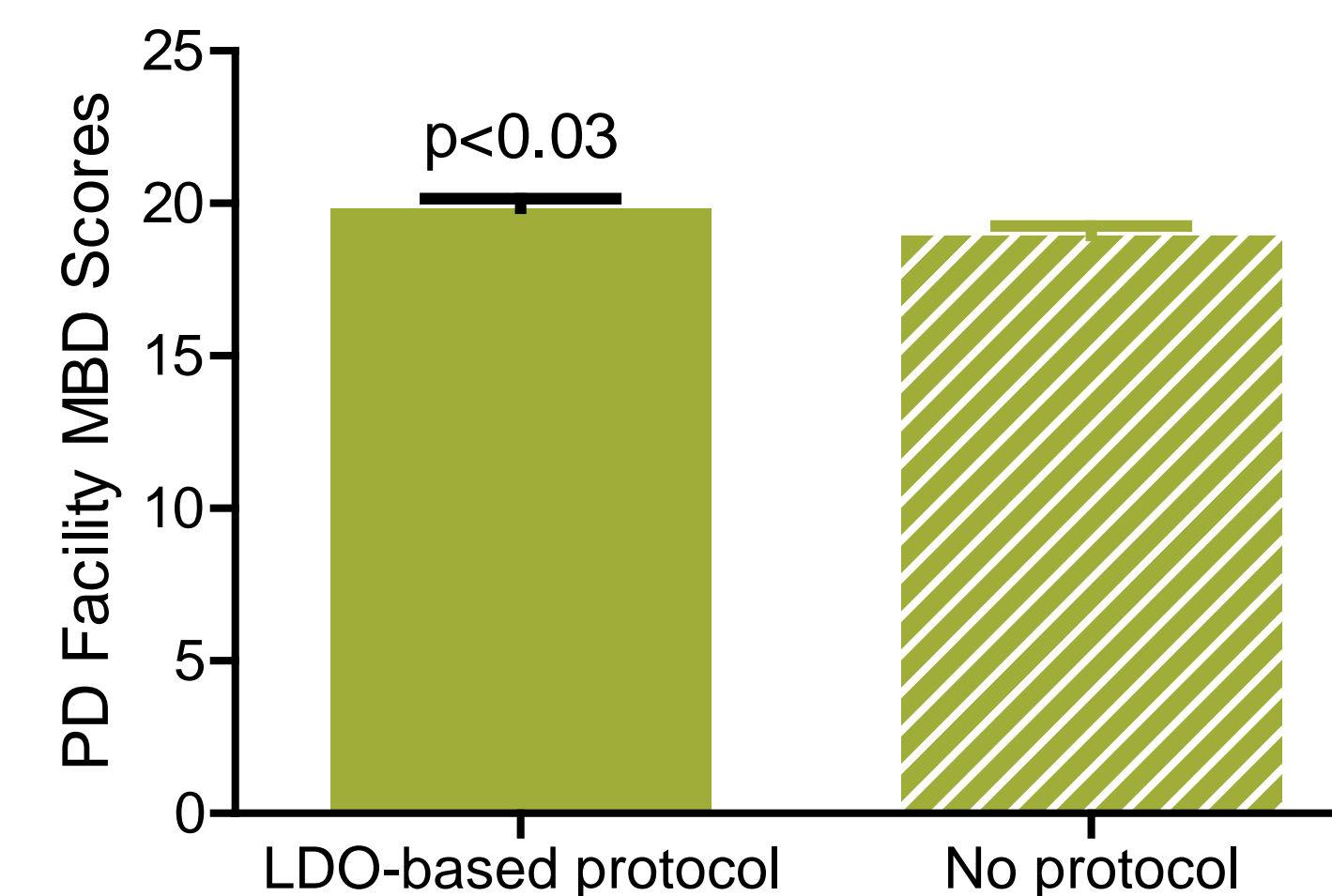


Figure 2. MBD score Based on LDO-based Protocol Usage

SUMMARY of RESULTS

- The percent of facilities using a standardized, evidence-based, physician-ordered protocol to manage MBD outcomes in a majority of patients varied by therapy (Figure 1).
- The at-home modalities differed significantly from the in-center modalities, (49% vs. 76%, p<0.001; Figure 1).
- PD facility MBD scores were higher in facilities using a standardized, evidence-based, physician-ordered MBD protocol (19.85±0.3; n=96) compared to those using ad hoc physician-ordered vitamin D dose adjustment without a protocol (18.95±0.3; n=81, p<0.03, Figure 2).

KEY LEARNINGS

- ✓ The differences in LDO protocol usage among dialysis therapy choices are influenced by the location of the dialysis treatment.
- ✓ Although fewer PD facilities used the LDO MBD protocol, use of the protocol in PD facilities was associated with better outcomes.
- ✓ This evaluation of practice pattern differences among modalities suggests programs to promote LDO protocol use should focus on alternative modalities in an effort to improve MBD outcomes within those modalities.

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® (DCR), and specifically acknowledge Karen Spach, PhD of DCR for her editorial contribution, in preparing this poster. DCR is committed to advancing the knowledge and practice of kidney care.

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ISN World Nephrology Conference, April 8-12, 2011, Vancouver, British Columbia