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Title

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Permalink

<https://escholarship.org/uc/item/0dt692px>

Journal

Journal of Renal Nutrition, 24(1)

ISSN

1051-2276

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Publication Date

2014

DOI

10.1053/j.jrn.2013.10.006

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Peer reviewed

Time to Revisit the Role of Renal Dietitian in the Dialysis Unit

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THE NOVEMBER 2013 issue of the journal published a very important and interesting study by Hand, Steiber, and Burrowes titled “Renal Dietitians Lack Time and Resources to Follow the NKF KDOQI Guidelines for Frequency and Method of Diet Assessment: Results of a Survey”.¹ The authors should be commended for executing an outstanding study on a very important but significantly overlooked subject—the roles and responsibilities of a renal dietitian in an outpatient dialysis unit. Although the dietitians cover a crucial aspect of care of chronic kidney disease (CKD) and end-stage renal disease (ESRD), there are only limited data regarding these issues.

This well-conceived study provides very relevant data for the care of the ESRD patients in the outpatient dialysis setting, including but not limited to the characteristics of the dietitians and their workload, frequency and barriers to dietary intake data collection, and methods of dietary intake collection and analyses. Of those data, it is remarkable that the finding by Hand and colleagues suggests that over 25% of the practicing dietitians in the United States are assigned more than 150 ESRD patients at a given time. Accordingly, we are equally impressed, albeit not completely surprised, with the results showing that only 6.5% of dietitians follow the Kidney Disease Outcomes Quality Initiative recommendations for biannual dietary

nutrient intake assessment, whereas 42% cited lack of time and 25% cited lack of software for not completing dietary assessments, and 62% “estimated” dietary intake data rather than using formal calculations.

These results are obviously very relevant to the clinical care of ESRD patients on maintenance dialysis and raise concern regarding several issues. Amongst these, the authors appropriately discuss the lack of a fast, practical, and reliable method for assessing dietary nutrient intake and suggest further research for improving these aspects. On the other hand, an important issue that is somewhat omitted and needs further discussion is where the dietitians actually spend their time rather performing one of their fundamental responsibilities (i.e., assessment of nutritional intake). The core responsibility of a dietitian is to craft the diets of patients by means of medical nutrition therapy and educate individuals on the benefits of maintaining proper dietary standards. Without appropriate assessment of nutritional intake, neither of those tasks can be accurately accomplished.

As the authors note, the actual work load, clinical or administrative, as well as the allocation of time to certain ESRD-specific nutritional issues is not studied in detail. However, in current practice, it is our own “anecdotal” experience that most, if not all, of the dietitians’ time is primarily spent on one specific subject (i.e., mineral and bone disorders [MBD]) of CKD. The dietitians are currently expected to follow and manage calcium and phosphorus on a bimonthly basis, make recommendations on vitamin dosing on a monthly basis, and follow and manage intact parathyroid hormone (iPTH) levels on a monthly to every 3-month basis.² In addition, they are expected to manage oral medications, including phosphate binders and the calcium-sensing receptor agonist, cinacalcet. It is no surprise that most of the limited time that they spend on assessing dietary nutrient intake is focused on the calcium and phosphorus content of the diet. Management of MBD of CKD, especially in the setting of ESRD, is undoubtedly an important part of the clinical and nutritional care of these patients, but it is only a part of it. From an epidemiological perspective, serum phosphorus levels are associated with mortality risk, but the clinically relevant threshold is at very high levels. Similar observations can be seen for iPTH and serum calcium levels. On the other hand, several nutritional markers such as serum albumin, serum

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Financial Disclosure: The authors declare that they have no relevant financial interests.

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Published by Elsevier Inc. on behalf of the National Kidney Foundation, Inc. 1051-2276/\$36.00

<http://dx.doi.org/10.1053/j.jrn.2013.10.006>

prealbumin, serum creatinine, and body composition are also strongly and independently associated with mortality risk, at least with the same or even more prognostic power compared with markers of MBD. It is also remarkable that there are no randomized clinical trials showing the mortality benefits of phosphate binders or nutritional or non-nutritional vitamin D supplements. The largest and the only study with adequate power to assess survival benefits of the calcium-sensing receptor agonist Evaluation Of Cinacalcet HCl Therapy to Lower CardioVascular Events (EVOLVE) was unfortunately negative, once again questioning the actual indications for its use.³

Why do dietitians spend most of their time managing MBD rather than other more nutritionally relevant responsibilities? The reasons for this practice are multiple and include the clinicians, the regulatory agencies, the pharmaceutical companies, and the researchers. The practicing physicians are focused on MBD because it is, at least from a surrogate biomarker perspective, treatable. If taken appropriately, phosphate binders do decrease serum phosphorus concentrations, and vitamin D or cinacalcet administration both decrease iPTH concentrations. On the contrary, most practicing physicians feel that nutritional interventions do not work; the common belief is that serum albumin cannot be improved or it is advised so by the experts because there are no randomized clinical trials (RCTs)⁴ despite encouraging epidemiological data.⁵ So why spend time on issues that are harder to influence although they are at least equally or maybe even more clinically important than MBD?

This practice by the clinicians is also encouraged and to some extent forced by regulators, payers, and administrators, at least in the United States. The current quality incentive program (QIP) criteria include monthly serum calcium and phosphorus measurements, and the proposed QIP for the year 2014 adds an upper threshold for serum calcium concentrations. The rationale for inclusion of these measures is based on the technical expert panel convened to provide recommendations on this subject,⁶ which also suggest routine dietary counseling as a process outcome. It is interesting to note that there are no other nutritional criteria included in the current or future QIP deliberations, at least to our knowledge. As expected, the requirements put forward by the regulators are strictly followed by the dialysis organizations and administrators, literally forcing the dietitians to spend most of their time on this subject, clinically relevant or not.

Another important reason for the emphasis on MBD in clinical practice is its financial implications. Most recent data from the United States Renal Data System indicate that in 2011, over \$750 million was spent only on phosphate binders and calcimimetics.⁷ By comparison, the total amount spent on statins or parenteral nutrition in dialysis patients is approximately \$25 million each, a **30-fold**

(emphasis added) difference. The marketing and lobbying efforts behind these practices are obviously unclear and not studied. However, it is clinically obvious that the relative importance of these different derangements is not so far separate from each other. From the dietitians work load and emphasis perspective, it is quite possible that clinical overemphasis is likely to lead to an “overprescription” of medications that are marketed to manage these metabolic abnormalities, albeit there is no proven mortality benefit based on adequately powered RCTs. This concern is expressed by the CKD-MBD technical expert panel in their recent report.⁶

Finally, the research community has not provided critical evidence supporting the investment of dietitian time in MBD management over other aspects of ESRD nutrition. Although there is outstanding basic and epidemiologic research in CKD-MBD, it is also apparent that the translation of these research data into actionable clinical practice has been limited to say the least. We have known the importance of calcium and phosphate control for decades, and we now know that the type of phosphate binder or use of calcimimetic agents do not influence mortality in maintenance hemodialysis patients.^{3,8} We are still yet to see an RCT examining the effects of vitamin D3 administration on morbidity or mortality since one single historical retrospective study suggested a survival benefit a decade ago.⁹ Although absence of evidence is not evidence of absence in this case, the nephrology community deserves appropriately designed RCTs to answer these important questions given the clinical and financial resources allocated to them. Even when interpreting the epidemiological evidence, the research community tends to bias toward their preference and overlooks important data suggesting that dietary protein intake is as important as serum phosphorus¹⁰ and dietary recommendations should be based on the phosphorus content of the specific protein and phosphorus sources,¹¹ requiring detailed diet assessment.

In summary, the study by Hand and colleagues raises concerns regarding an important clinical dilemma: What are the core responsibilities of a renal dietitian? The renal dietitians undoubtedly carry an important role in the care of CKD and ESRD patients, and recent financial and regulatory restrictions have already compromised their ability to provide individualized care. In that respect, a case load of up to or more than 150 patients in an outpatient dialysis unit is a recipe for poor outcomes, much like that observed for physicians.¹² Within those restrictions, it is unfortunate that it seems that most of the available time is allocated for a single issue, MBD in this case, rather than engaging in a comprehensive medical nutritional therapy much needed for these patients. It is the much overlooked responsibility of the researchers, regulatory agencies, and practicing clinicians to define the appropriate role for the dietitians in the dialysis unit.

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