Peanuts or Pretzels? Changing Attitudes about Eating on Hemodialysis

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I am not that fond of peanuts, and I hate pretzels, but when stuck on an airplane flight, I smile when the flight attendant offers them. This is not because I am hungry, and I certainly do not need the calories. My pleasure is less in the food itself and more in the small ritual of hospitality that marks the midpoint of the flight. Food makes most people feel welcome and appreciated, and patients on dialysis are not different. Eating at least breaks the monotony of being tied to a chair for hours. Unlike airline passengers, many patients on dialysis have protein-energy wasting (PEW) syndromes and could potentially benefit from the additional protein and calories (1). As tempting as it may be to compare dialysis units to discount airlines that withhold peanuts or pretzels from their passengers, there are historical reasons why American dialysis units have frequently banned eating on dialysis.

When maintenance hemodialysis in hospital-based units began in the 1960s, inefficient dialysis meant treatment times over 24 hours, and therefore, units provided meals (2). By 1976, the standard treatment was 8 hours of dialysis three times a week, and patients ate a meal that they brought if they were not provided with one. As dialysis became more efficient, treatment times were shortened, and with more rapid volume and solute removal, hemodynamic instability became a challenge (3). Importantly, hypotension seemed to be more common among patients who had recently eaten, and additional investigation identified a postprandial fall in systemic vascular resistance as the most likely mechanism (4,5). Although there are no case reports of aspiration from eating on dialysis, newspaper articles do show a few such lawsuits (6). Thus, many American hemodialysis units banned eating on dialysis.

In contrast, European and Asian dialysis units did not reduce dialysis times to the same extent as American units, and a much larger percentage of these units continued to provide meals for their patients or allowed patients to bring their own food. Concern that eating may be beneficial for PEW is counterbalanced with concern for hypotension in European guidelines on hemodynamic instability on dialysis (7). Although no systematic study has been performed, relatively few complications were noted in a recent survey of European and Asian units that continue the practice (8). Thus, although there has been diversity in practice worldwide, American units became less likely than units in other countries to allow eating during treatment.

Modern proponents of eating on dialysis do not dispute effects of postprandial physiology on BP, but they argue against its clinical significance (9,10). In their eyes, clinically significant negative effects were only seen with large meals, large fluid intake, or meals late in the dialysis session. They note correctly that many studies occurred in an era when some patients were still on acetate dialysate and before biocompatible membranes, volumetric ultrafiltration, low-temperature dialysis, and limits on hourly ultrafiltration were common. For example, they cite a study performed in 2008 over three treatments in 126 patients in whom there were no effects of eating on any measure of BP (11). Furthermore, they argue that there may be significant benefits of eating on dialysis for patients with PEW. First, they note that oral nutrition when used as a control in studies of intradialytic parenteral nutrition was associated with improved albumin and outcomes (12). The loss of amino acids that occurs with dialysis is intensely catabolic for muscle, and radio-tracer studies confirmed that the slow delivery of amino acids to the bloodstream in the postprandial state provided excellent delivery of amino acids to muscle (13,14). Patients who ate on dialysis consumed more protein and more calories (15) and reported a higher quality of life (16). In a retrospective, observational study, patients with PEW defined by a serum albumin of <3.5 mg/dl who received oral supplements containing 15 g protein on or before dialysis had a 29% decrease in mortality compared with matched control subjects in a 14-month follow-up (17). However, eating on dialysis did not help patients without PEW in the few available studies (18).

Given the growing data on the relative safety and possible benefits of oral nutrition before or during hemodialysis, have there been changes in practices of United States hemodialysis units? In this issue of the Clinical Journal of the American Society of Nephrology, Benner et al. (19) examine surveys on eating in dialysis units completed by dietitians in units owned by DaVita Healthcare Partners, Inc., a leading United States dialysis provider. The surveys reported on both practices around oral nutrition and attitudes of the dietitian, facility manager, and medical director toward eating on hemodialysis. After an initial survey in 2011

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showed a diversity of practices on eating on dialysis, Benner et al. (19) devised an educational intervention sent in 2013 to promote eating before, during, and after dialysis and high-light safety issues. Then, in 2014, they repeated the survey (19); >1000 units responded to each survey, which gave the study adequate power. The results show a great diversity of practices but a strong trend toward allowing eating on dialysis when the two surveys were compared. Only about 29% of the units had an absolute ban on eating during dialysis in 2011, and this number fell to 23% in the second survey; <20% of dialysis units encouraged eating on dialysis in 2011, but this increased to >30% in 2014. The majority of units allowed eating but did not encourage it. Dietitians were much more likely to support eating on dialysis than medical directors or facility administrators, but all groups had a more favorable outlook on eating on dialysis in the 2014 survey compared with in 2011. Hypotension, gastrointestinal symptoms, and clinic hygiene were cited as major reasons to oppose eating, with little change between the two surveys. However, meeting caloric needs, avoiding hypoglycemia, and difficulty enforcing a ban on eating were cited as reasons to allow eating. Interestingly, of the units that banned eating, two thirds reported that patients ate on dialysis, despite the ban. Meeting caloric needs was the only reason for eating that was cited more often in 2014 than in 2011. When asked why they changed practices, very few respondents cited the intervention that Benner et al. (19) sent to promote eating. Of those respondents, one of three restricted eating more because of the intervention. Thus, other factors than the intervention were responsible for the changes in behavior.

The message from the work by Benner et al. (19) is clear. Eating on dialysis is increasing in the United States both because of official encouragement in some units and because patients are defying bans on eating in others. The benefit for patients with PEW is increasingly clear, and the risks are small. The challenge for health care providers is to help our patients make good choices of when and what to eat. My experience matches the dietitians in the survey who described eating as a teaching opportunity, because boiled peanuts, pretzels, extra-large colas, and nacho cheese corn chips make great food for discussion about healthy food choices. Most studies showing benefit of feeding on dialysis have used nutritional supplements, but studies in other settings suggest that mixed meals of similar composition could be equally beneficial (20,21). Benner et al. (19) developed sensible suggestions (shown in the supplement material in ref. 19) as to limiting the size of the meal, lowering fluid consumption, eating 15 g protein, and not creating spills. On the basis of studies of hypotension, I might add encouraging eating before or earlier in dialysis to that list. It is clear that we need more information on how to maximize benefits and reduce risks for the patients.

The piece missing from the study by Benner et al. (19) is patient attitudes about eating. If some patients are eating when forbidden to do so, there must be a reason. Whether we pay attention to the scientific evidence that oral supplements given during dialysis improve self-reported quality of life (16) or our human experience that a little food makes sitting in a chair for 3 or 4 hours more tolerable, we can guess that eating on dialysis may meet a nonmedical need. Although relying on science, I think that it is time that we listen to our patients as we revise our policies about eating on dialysis.

Disclosures
None.

References


Published online ahead of print. Publication date available at www.cjasn.org.

See related article, “In–Center Nutrition Practices of Clinics within a Large Hemodialysis Provider in the United States” on pages 770–775.